CS302 - Data Structures

using C++

Topic: Memory Allocation

Kostas Alexis

AUTONOMOUS ROBOTS LAB

Application Memory

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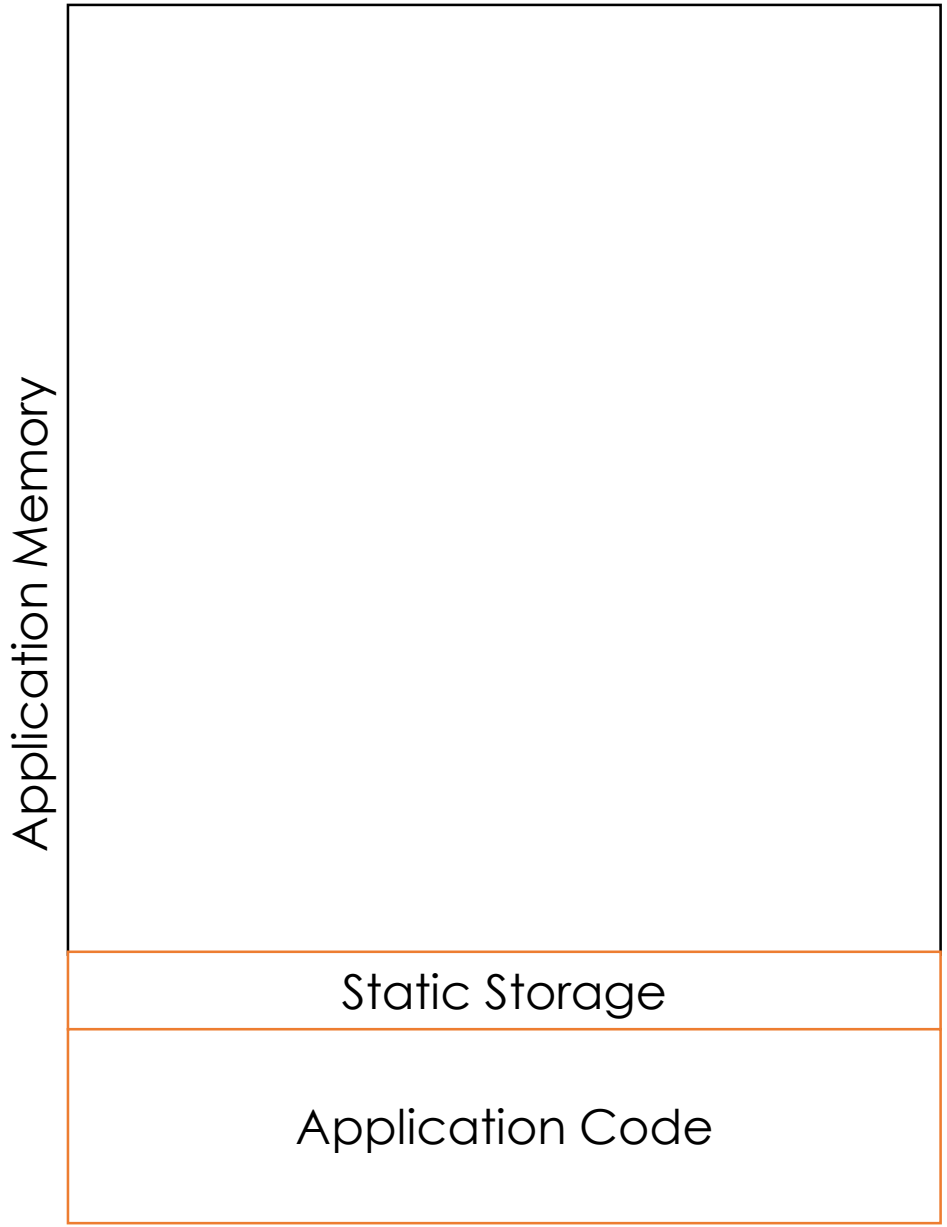

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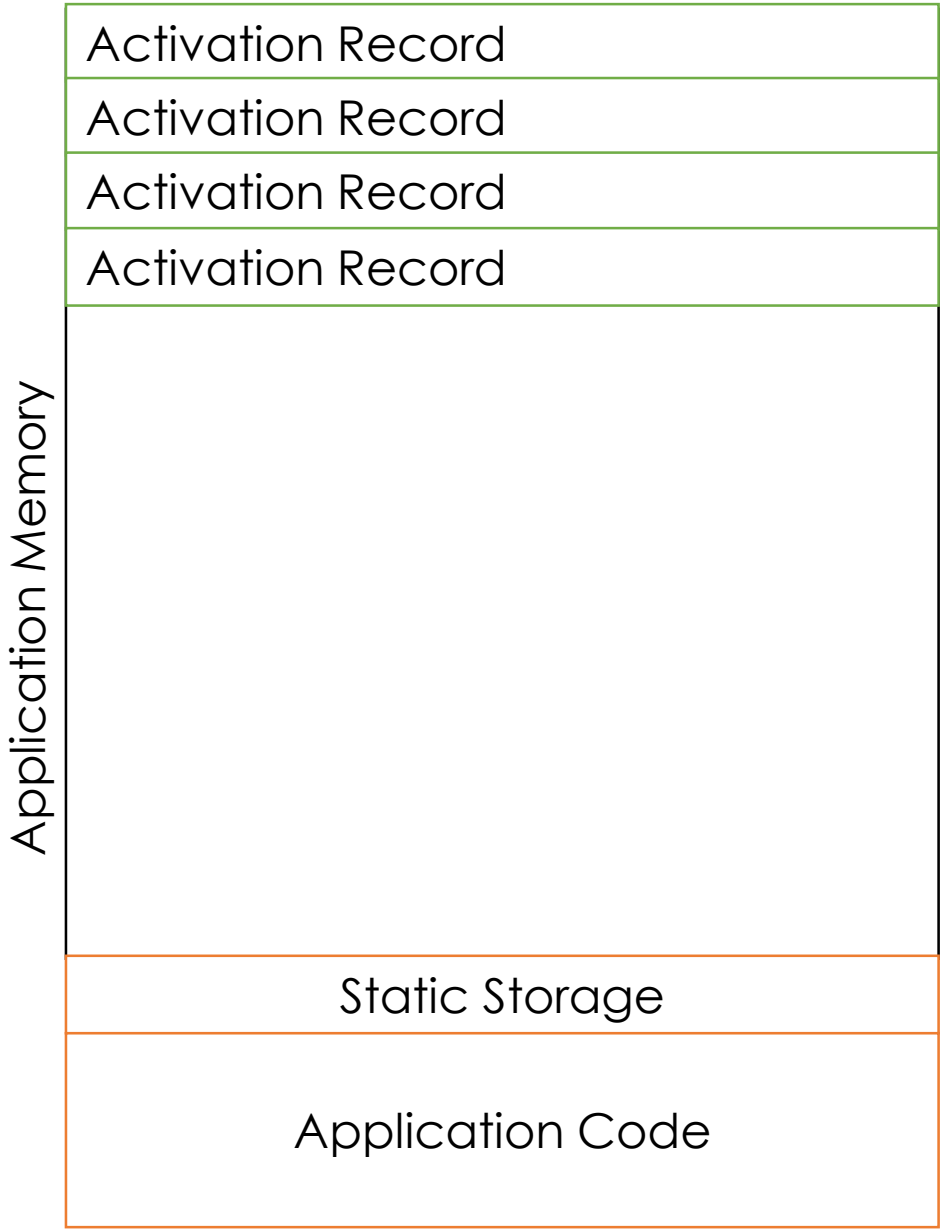

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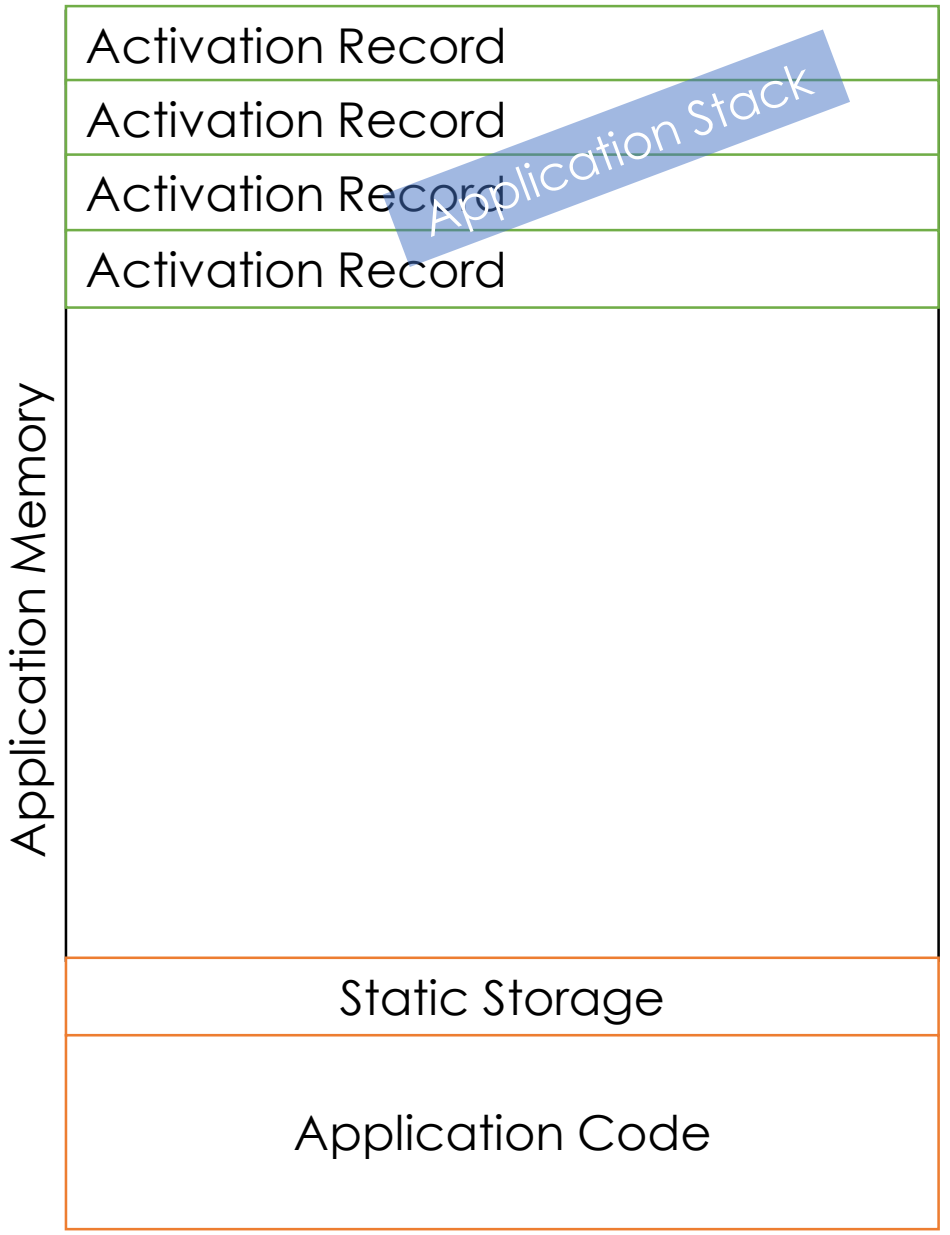

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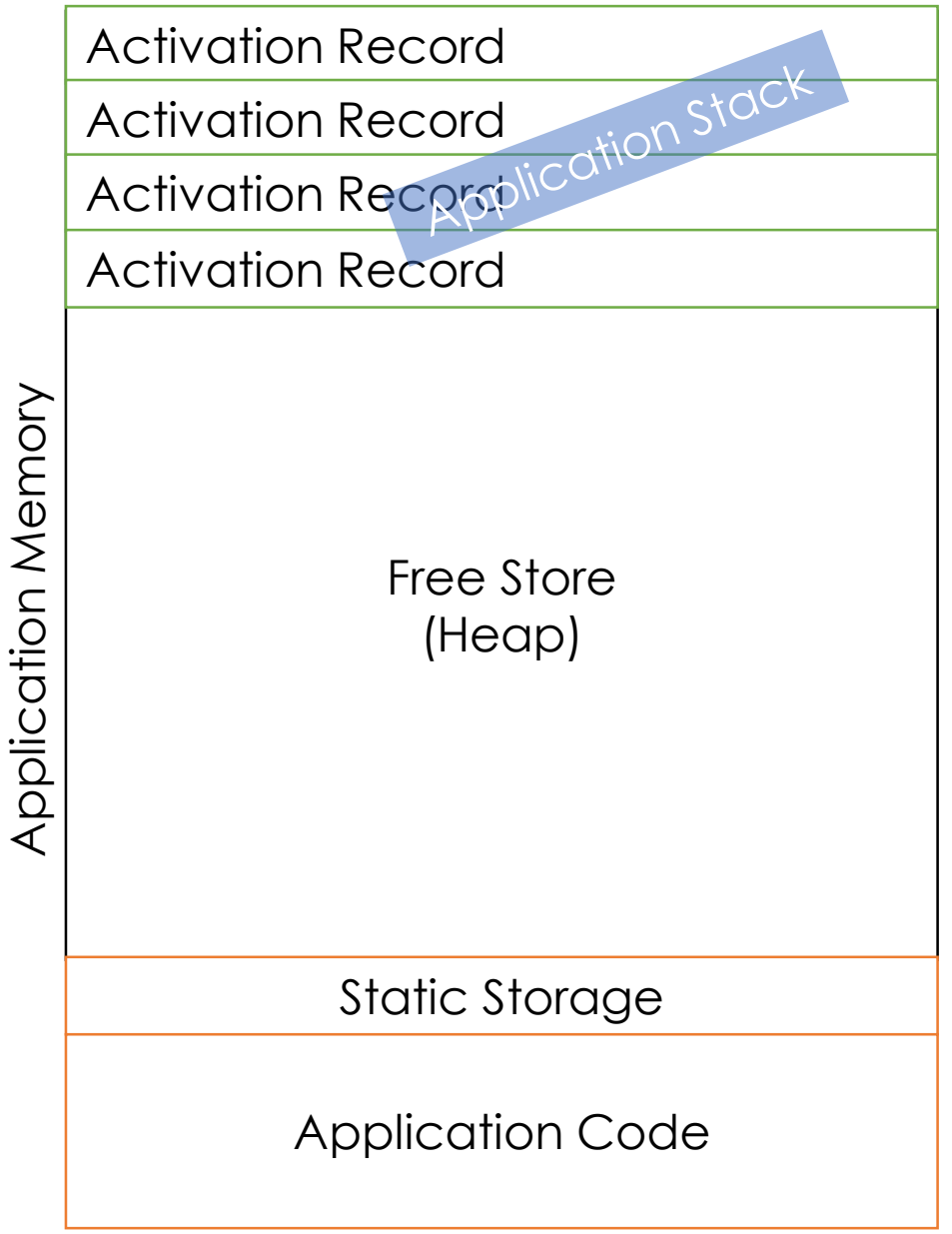

Application Memory

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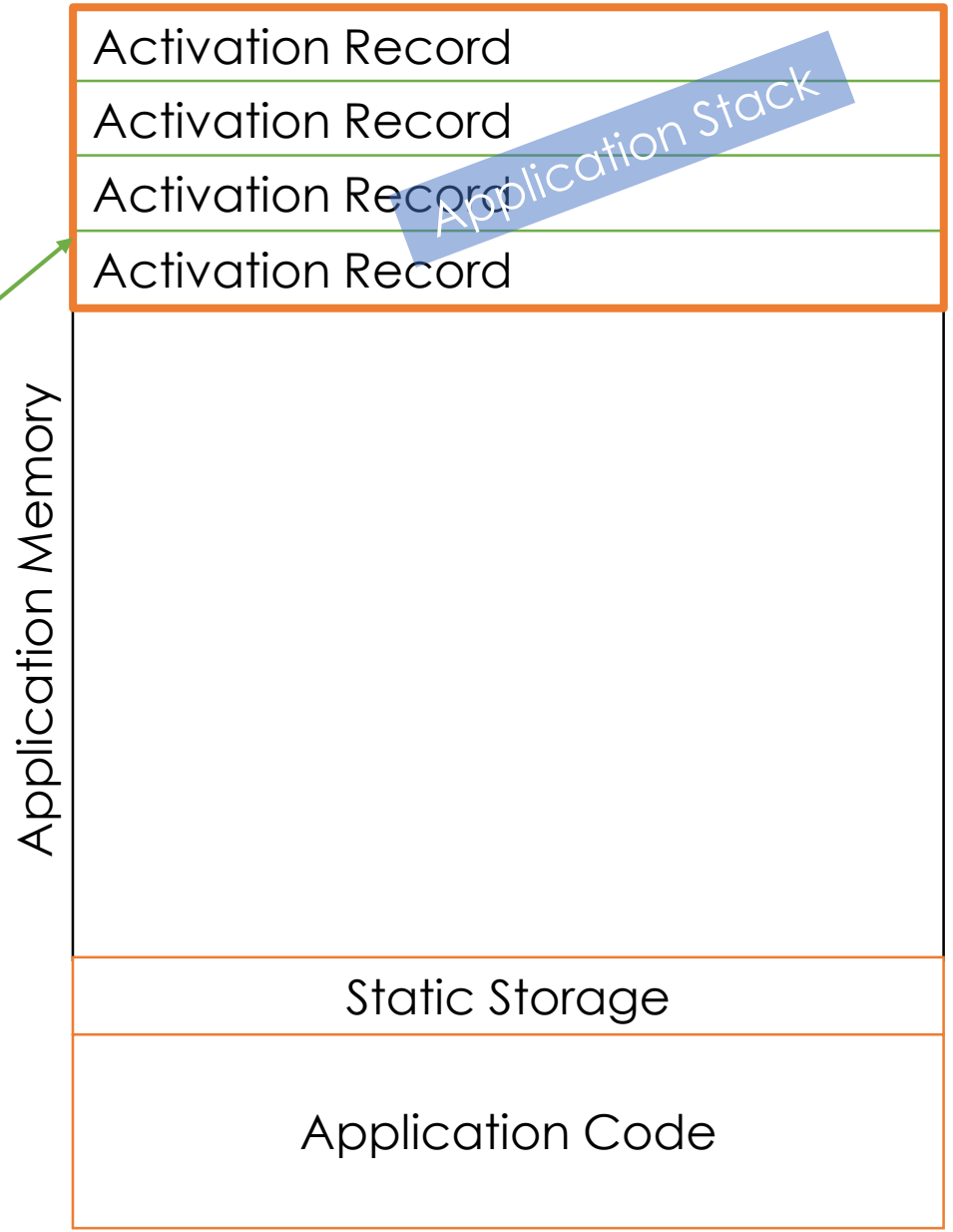
Function
Parameters and Local Variables

Memory freed when functions or method ends



Application Memory

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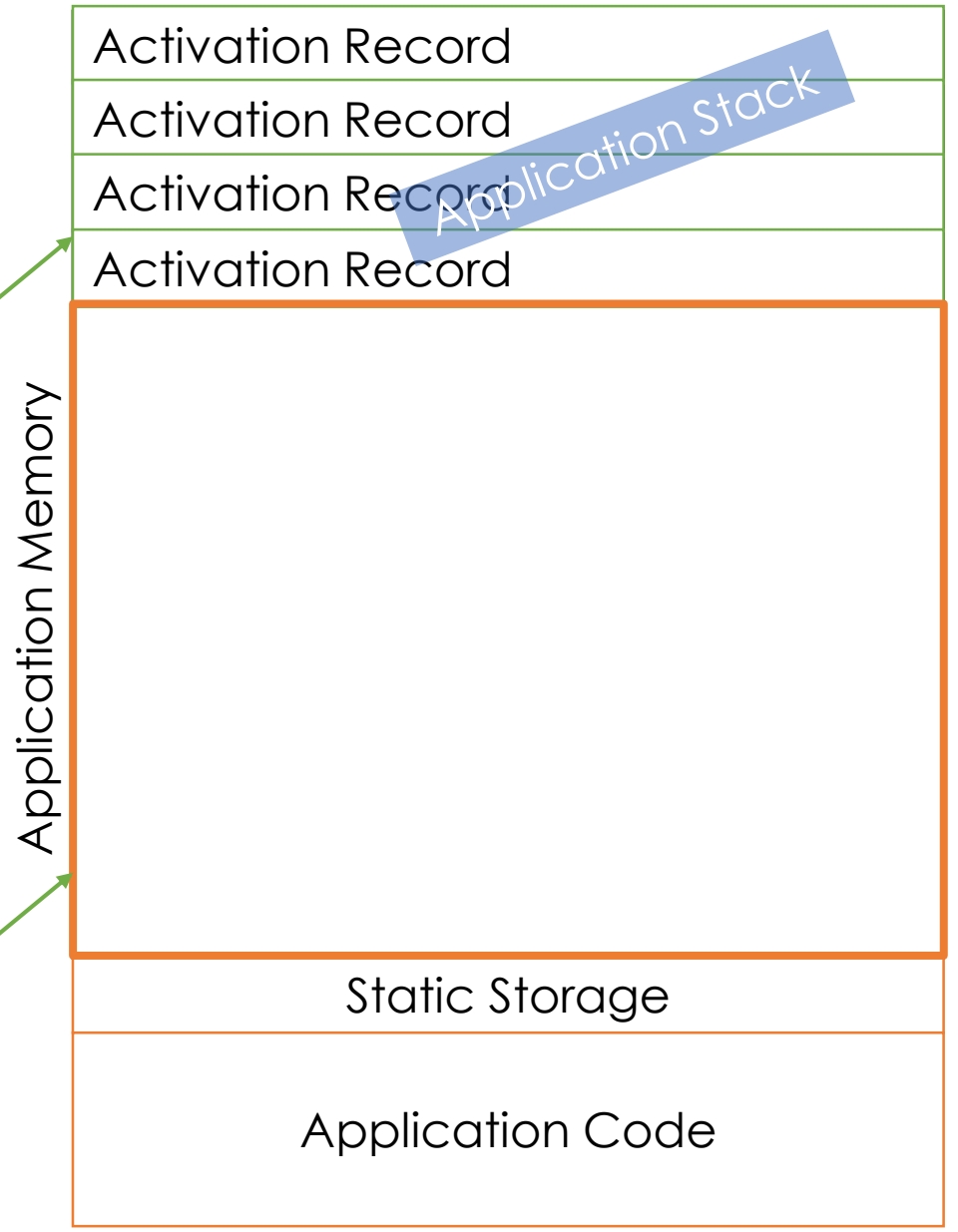
Function
Parameters and Local Variables

Memory freed when functions or method ends

Objects instantiated with **`new`**



Application Memory

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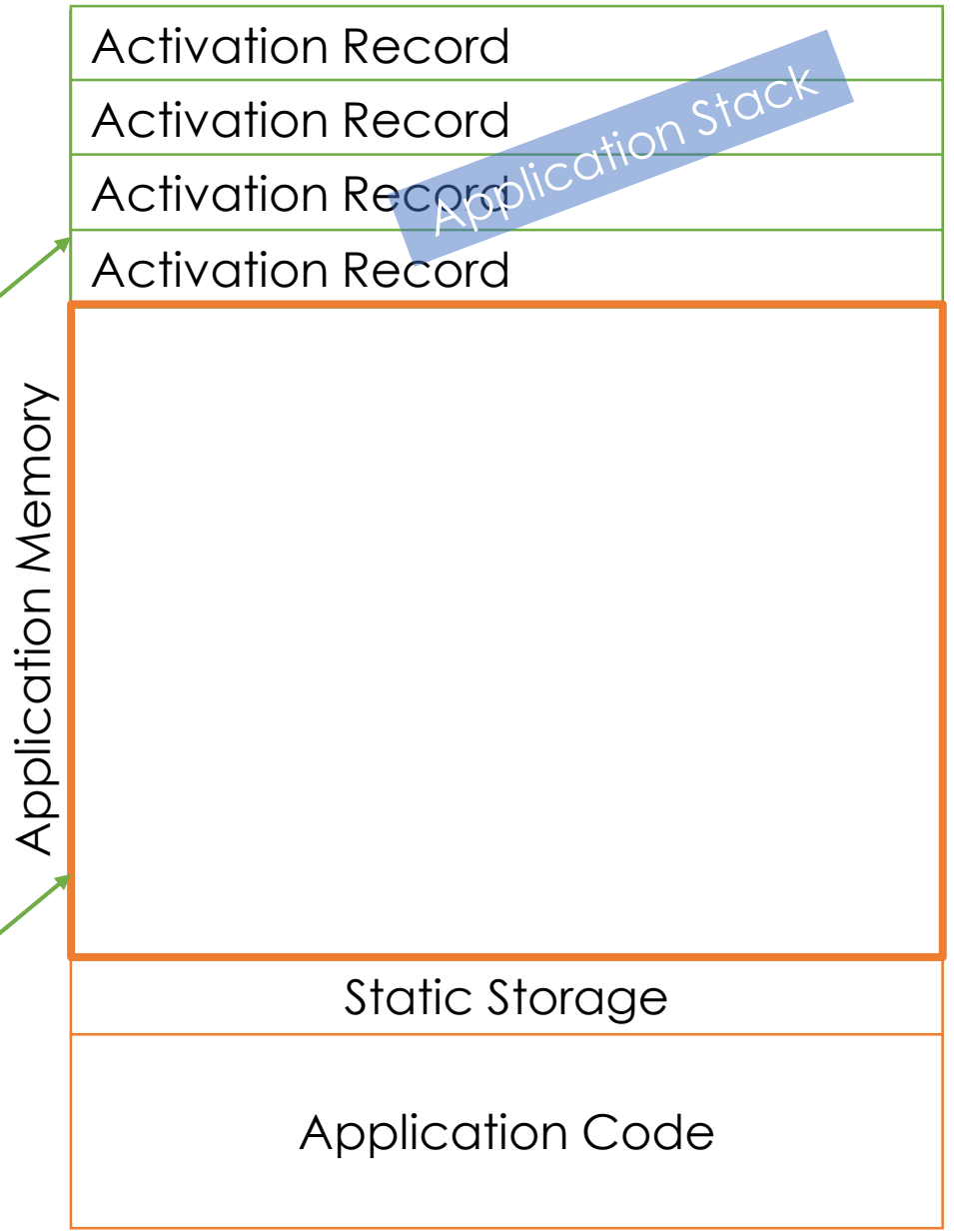
Function
Parameters and Local Variables

Memory freed when functions or method ends

Objects instantiated with **`new`**

Memory freed when **`delete`** statement is executed



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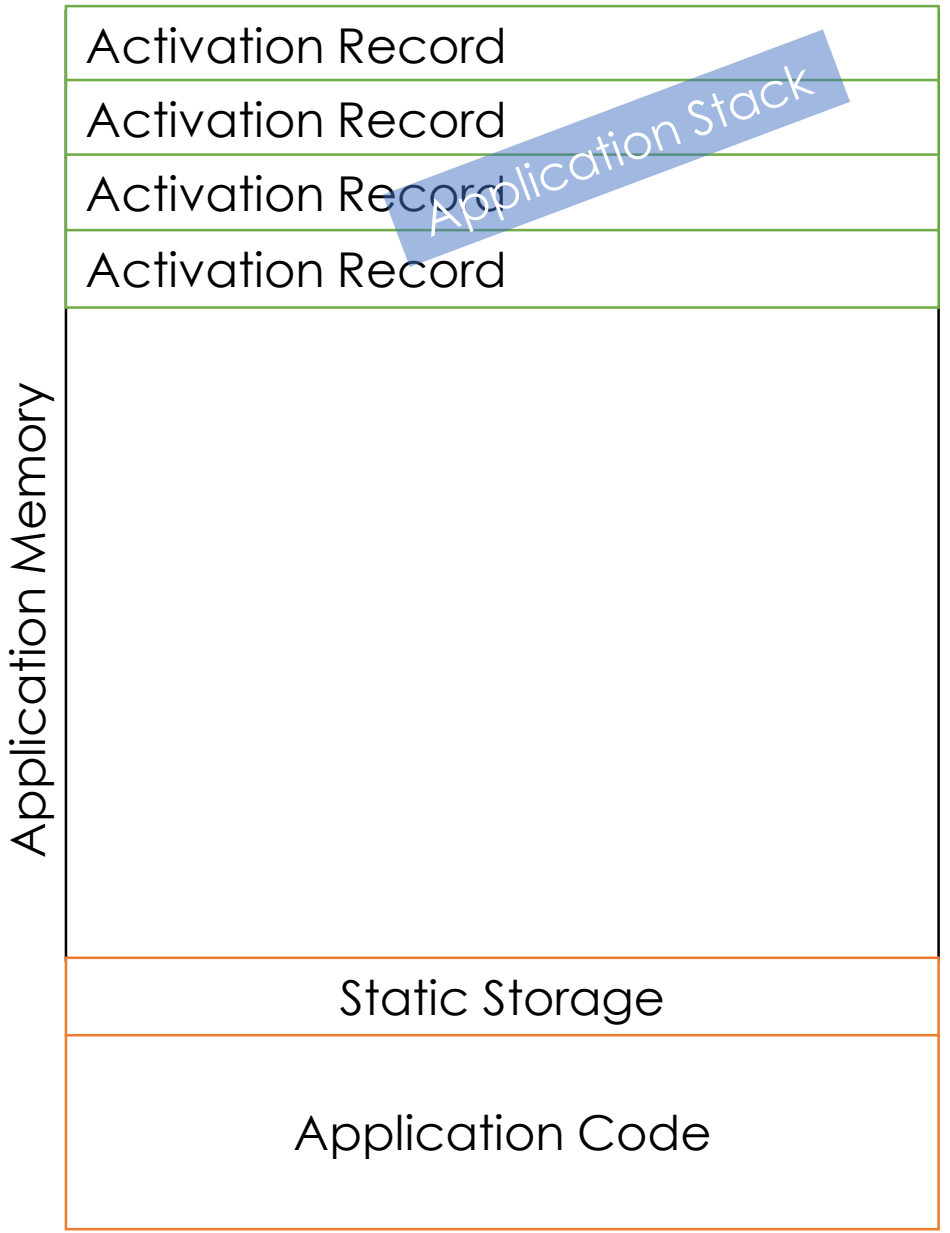

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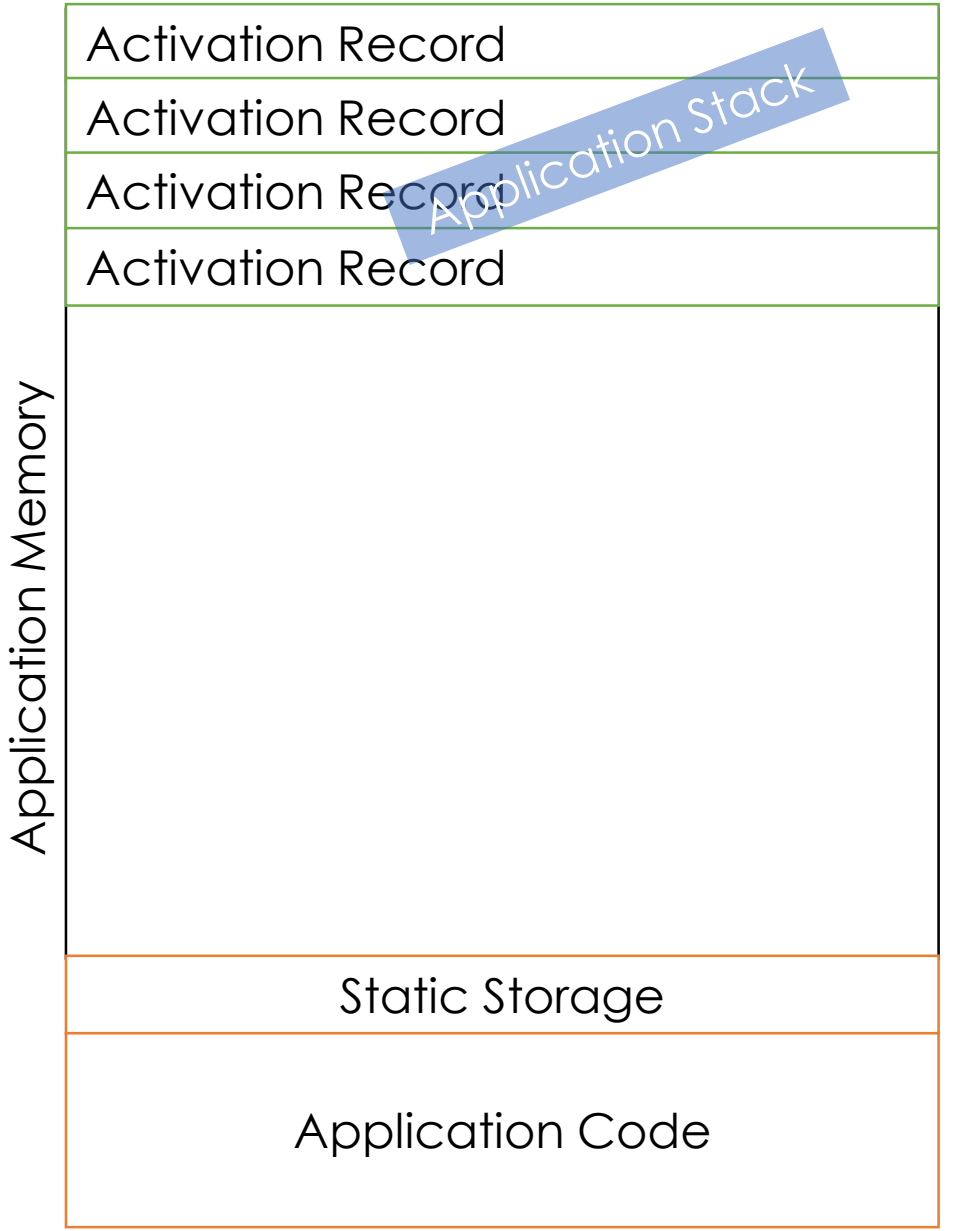

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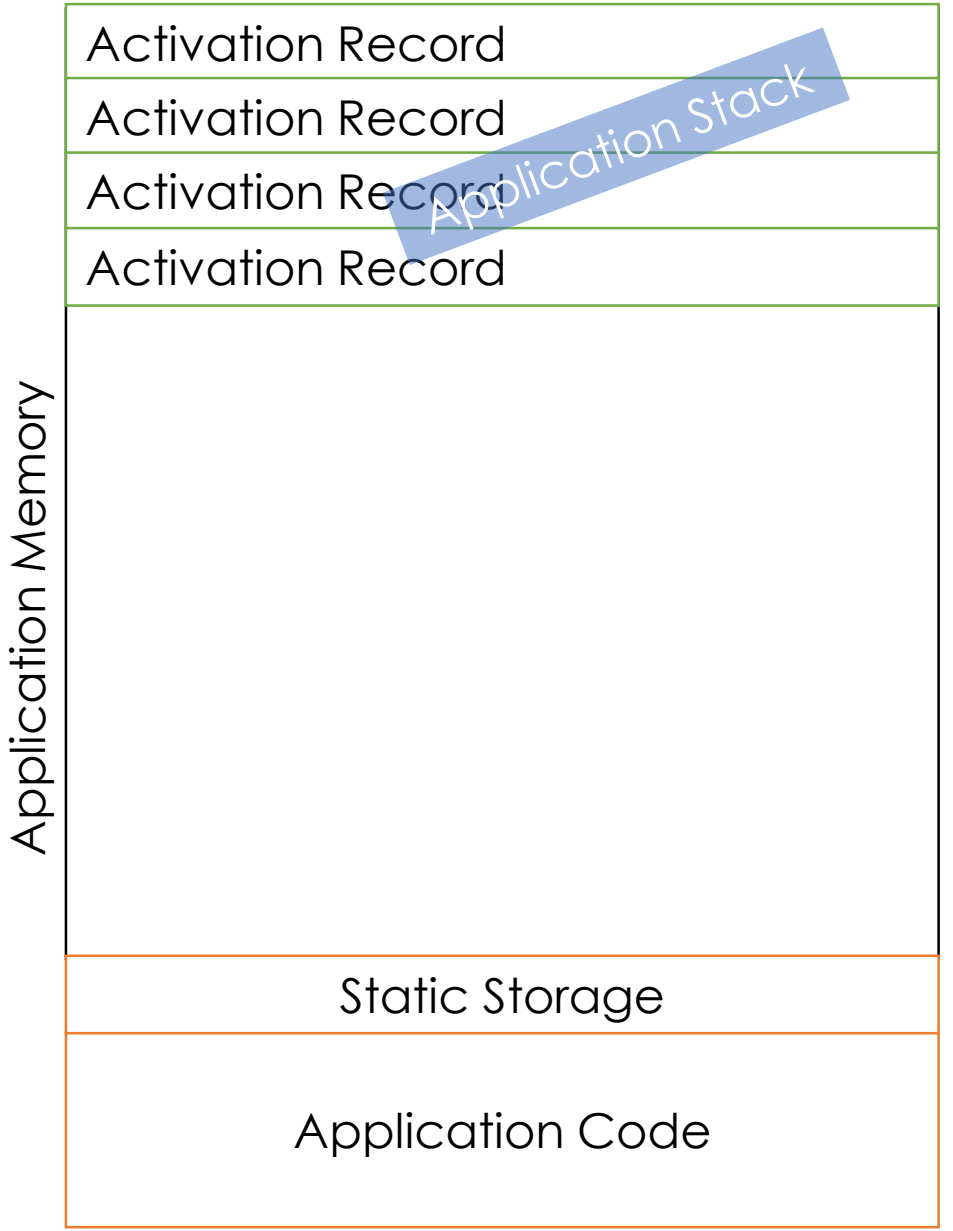

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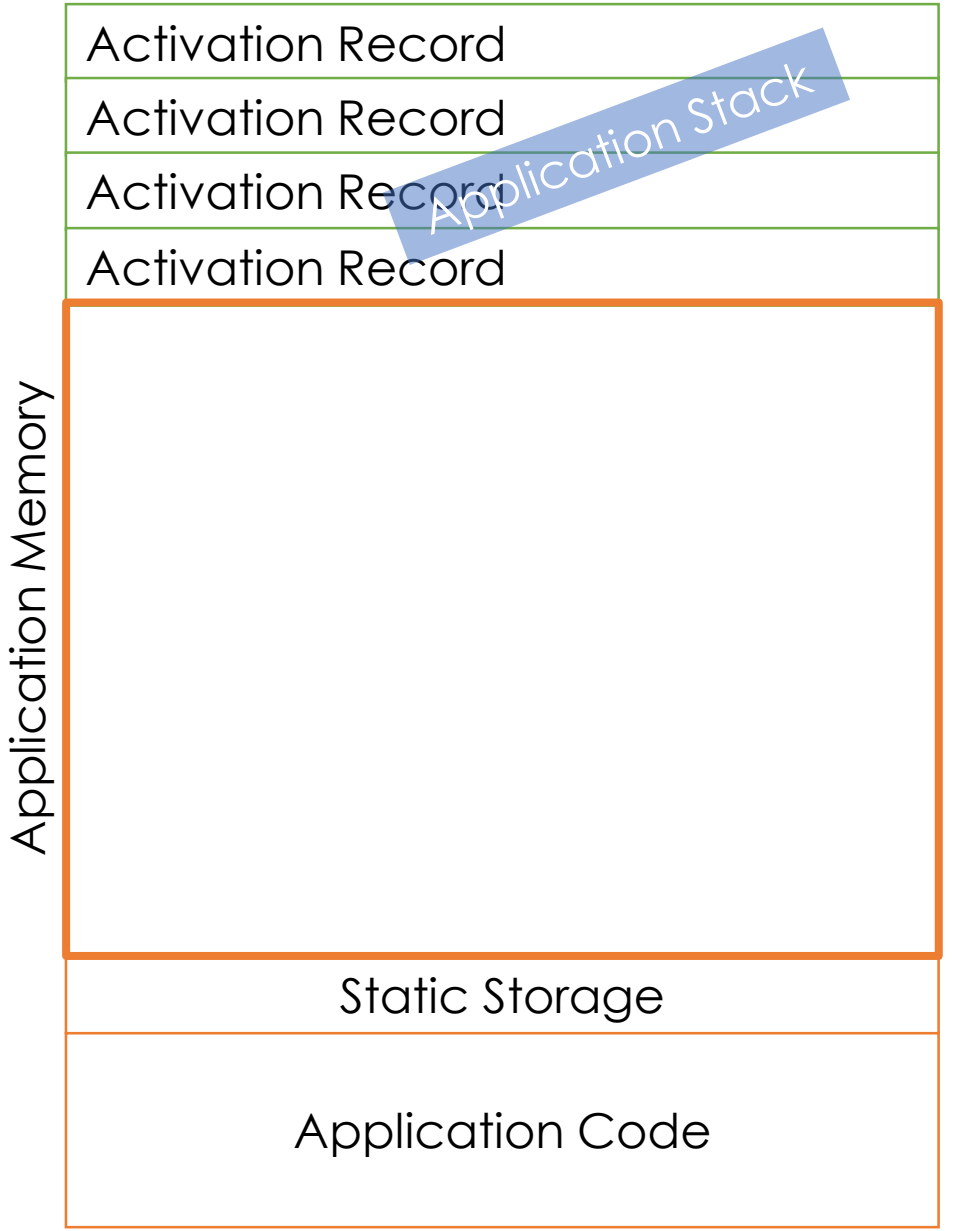

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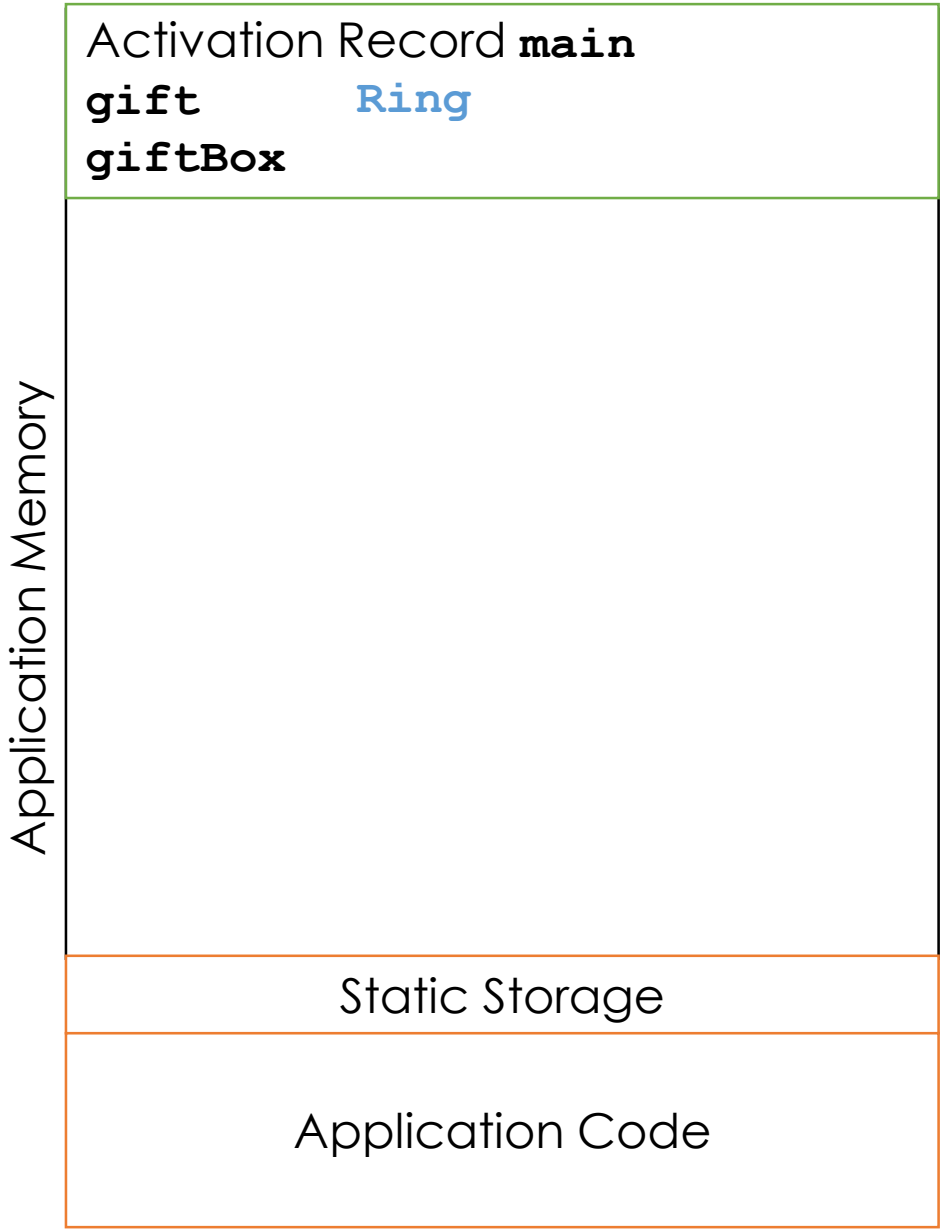

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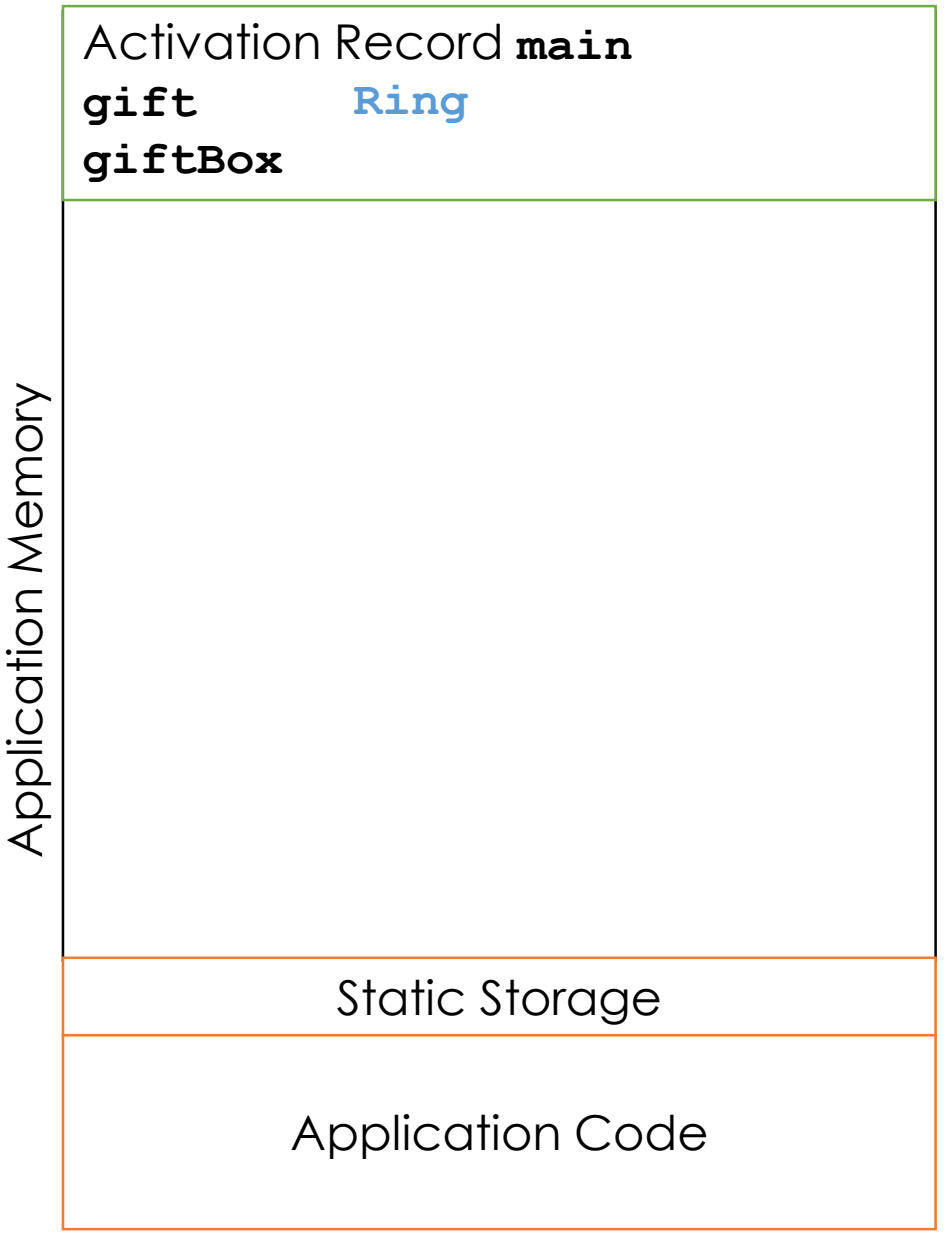

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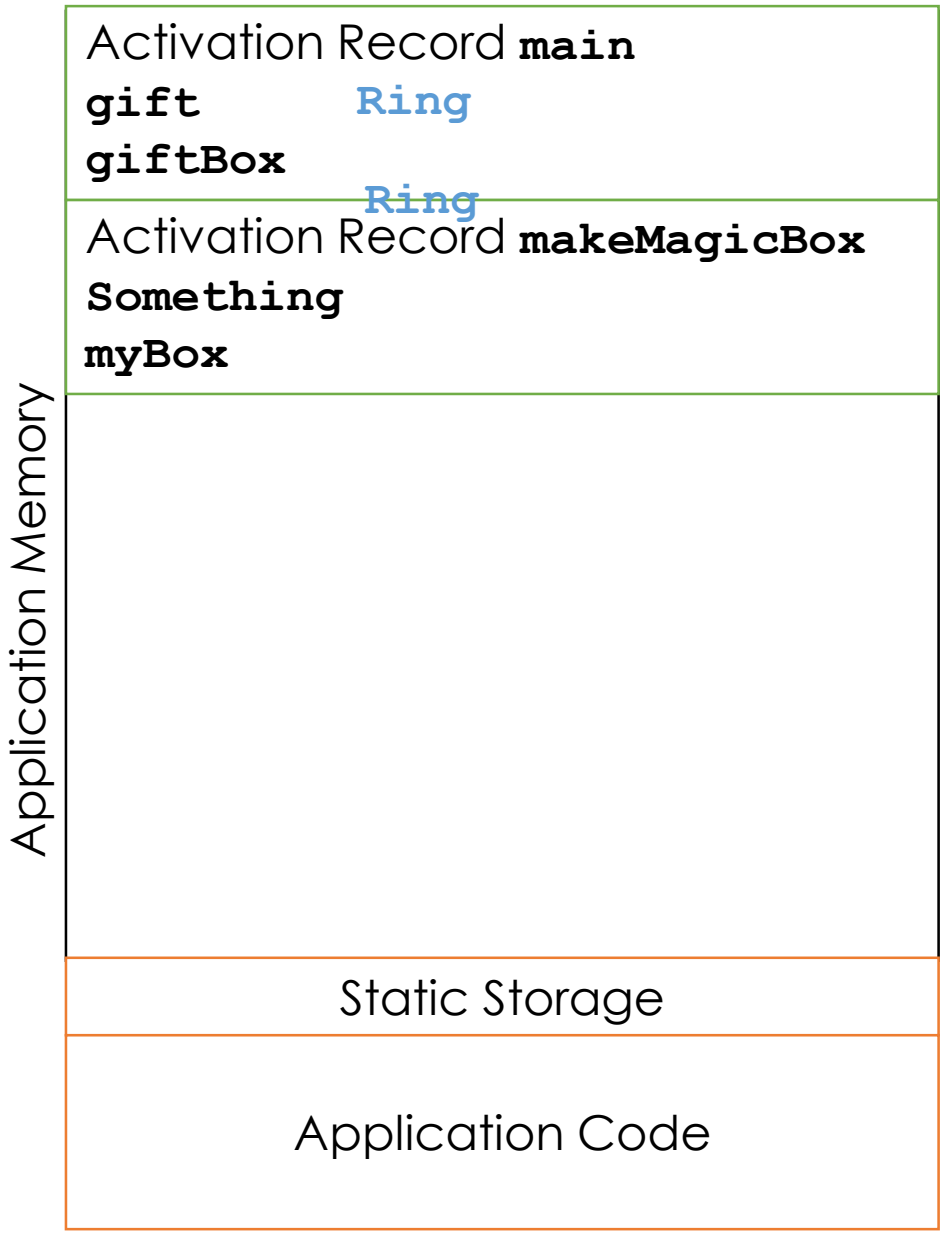

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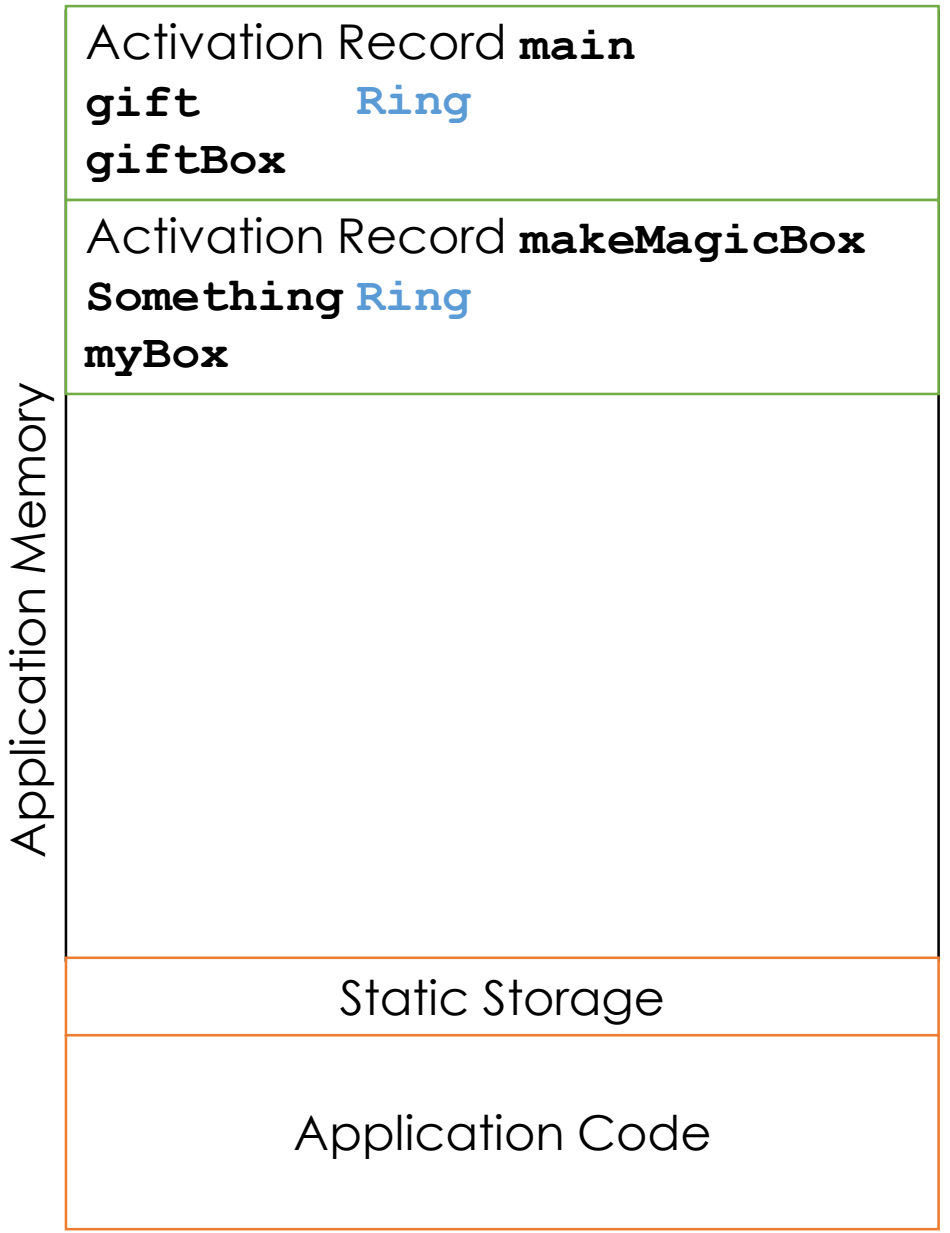

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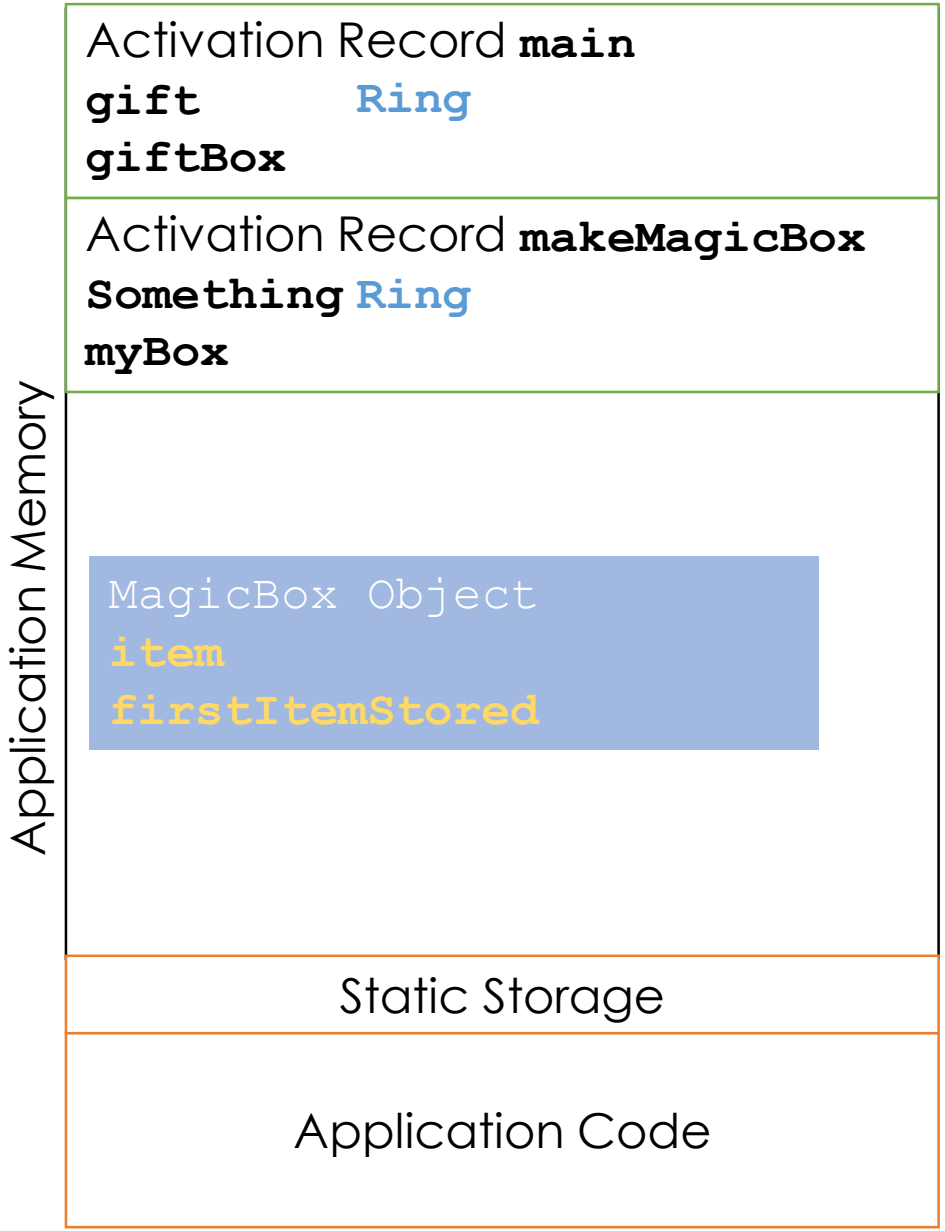

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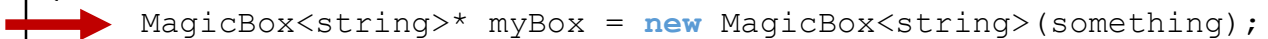

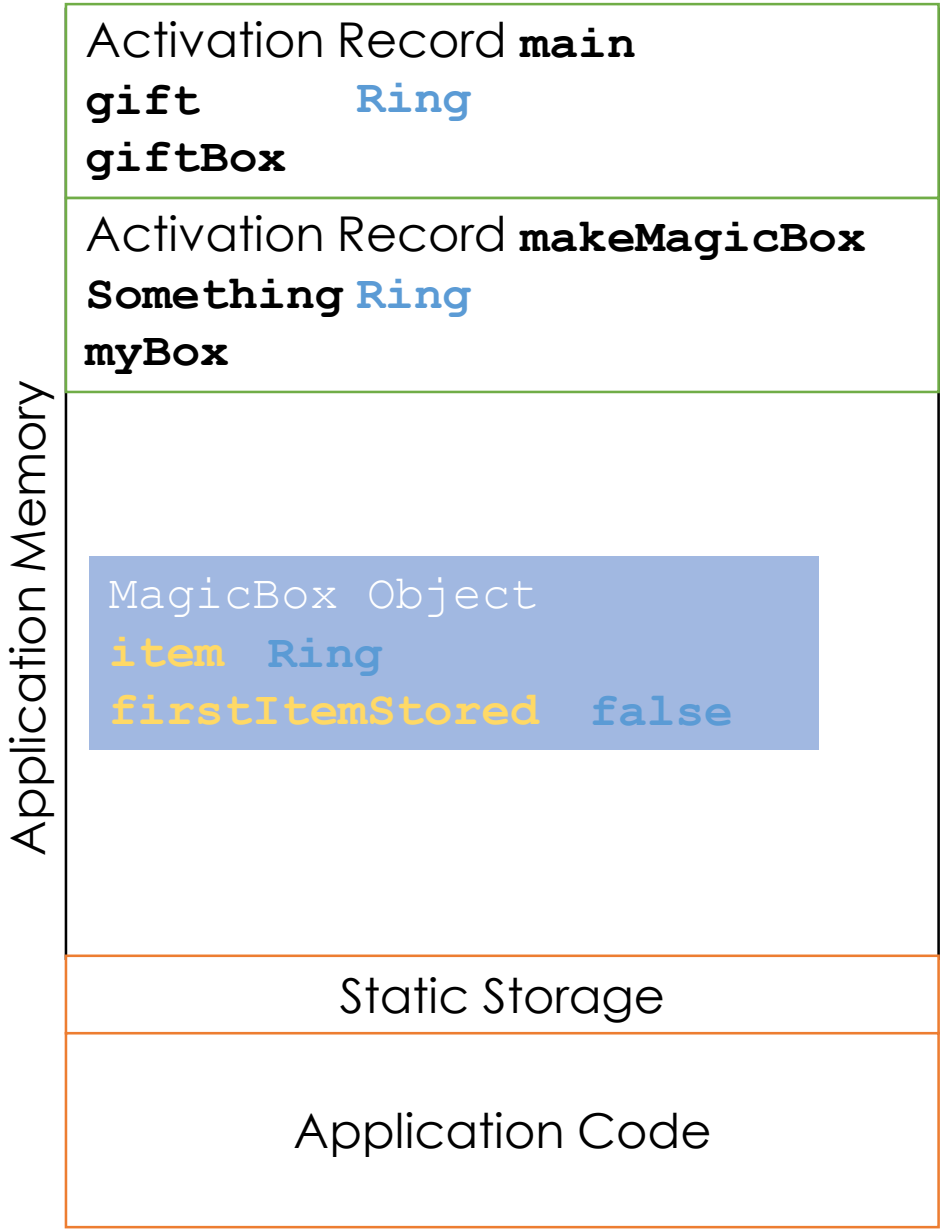

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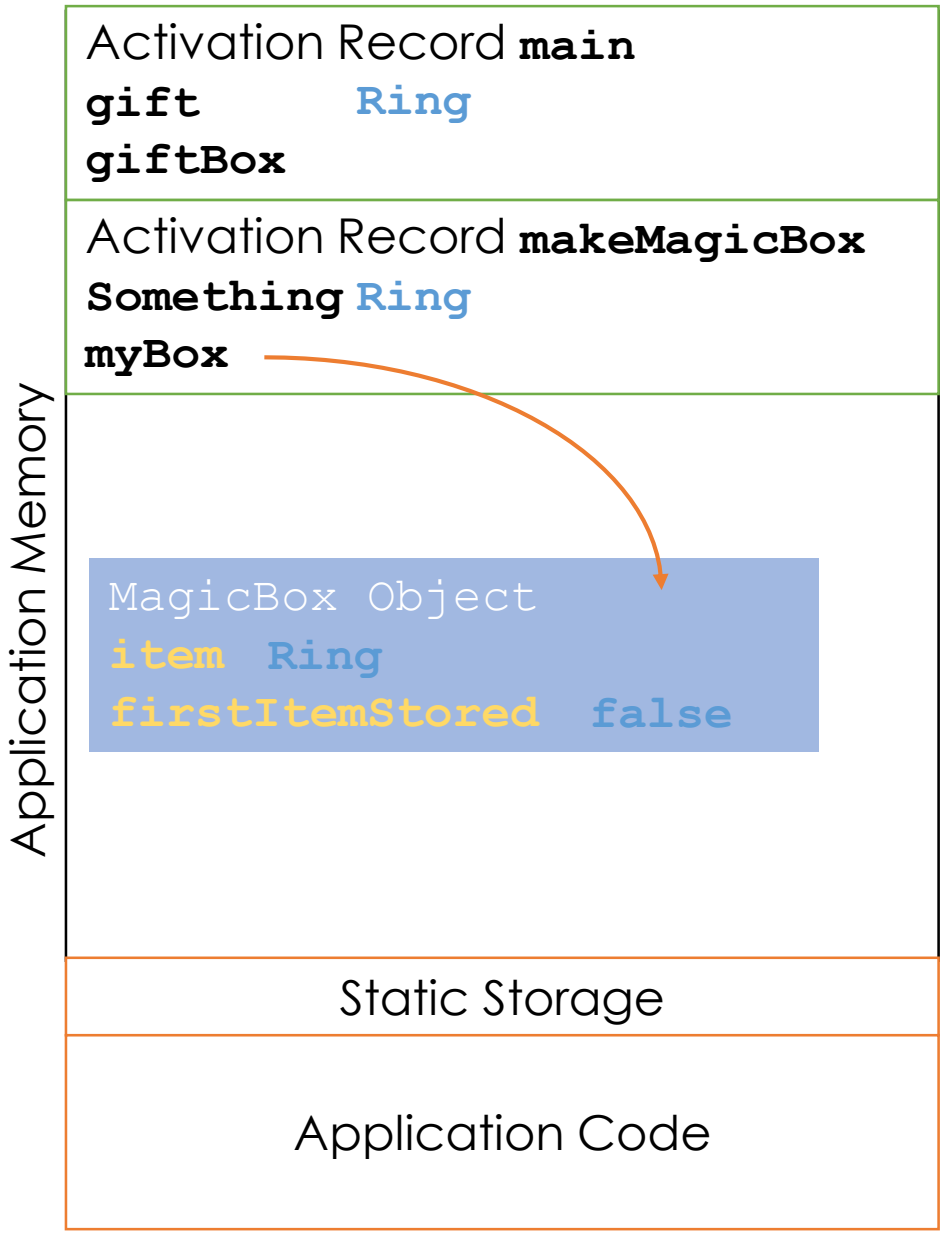

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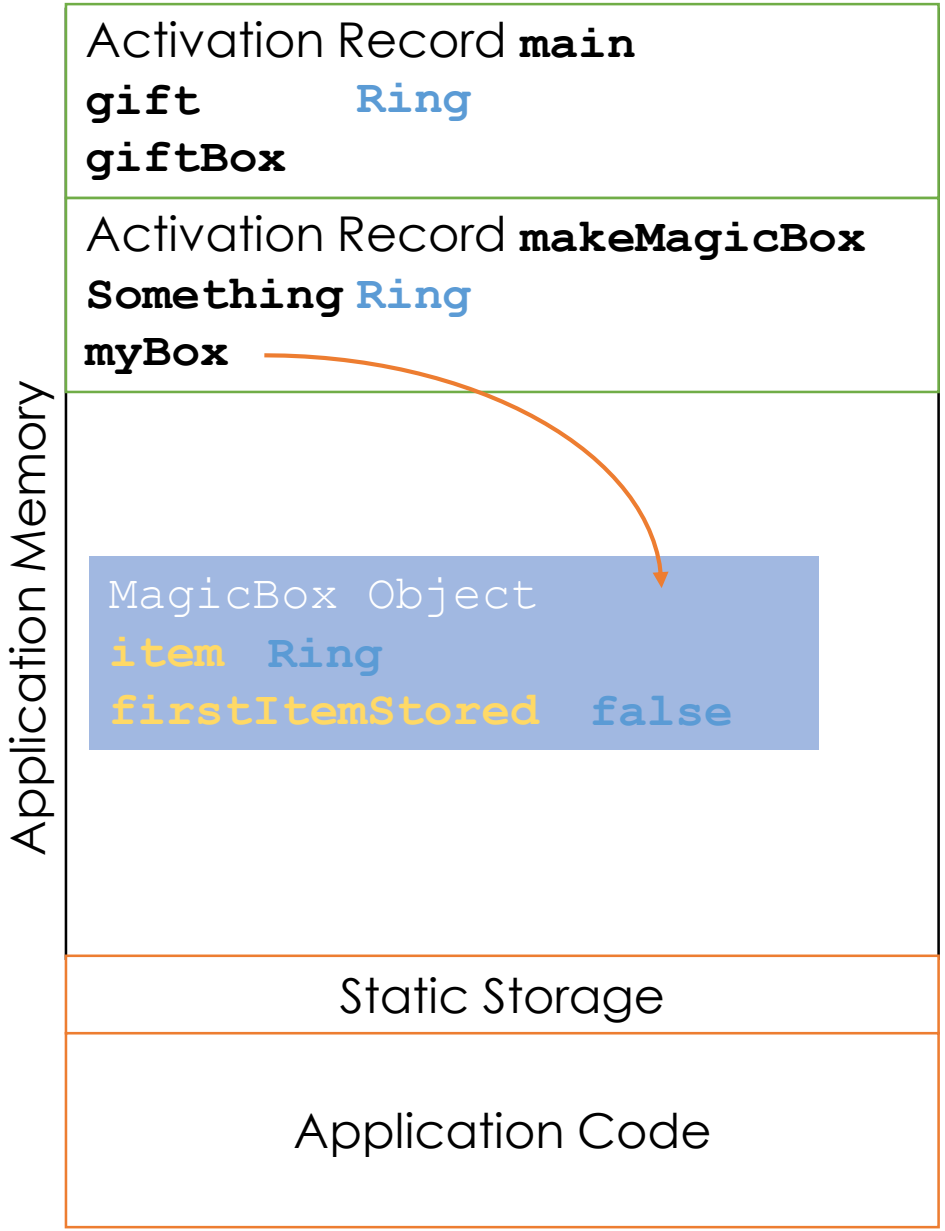

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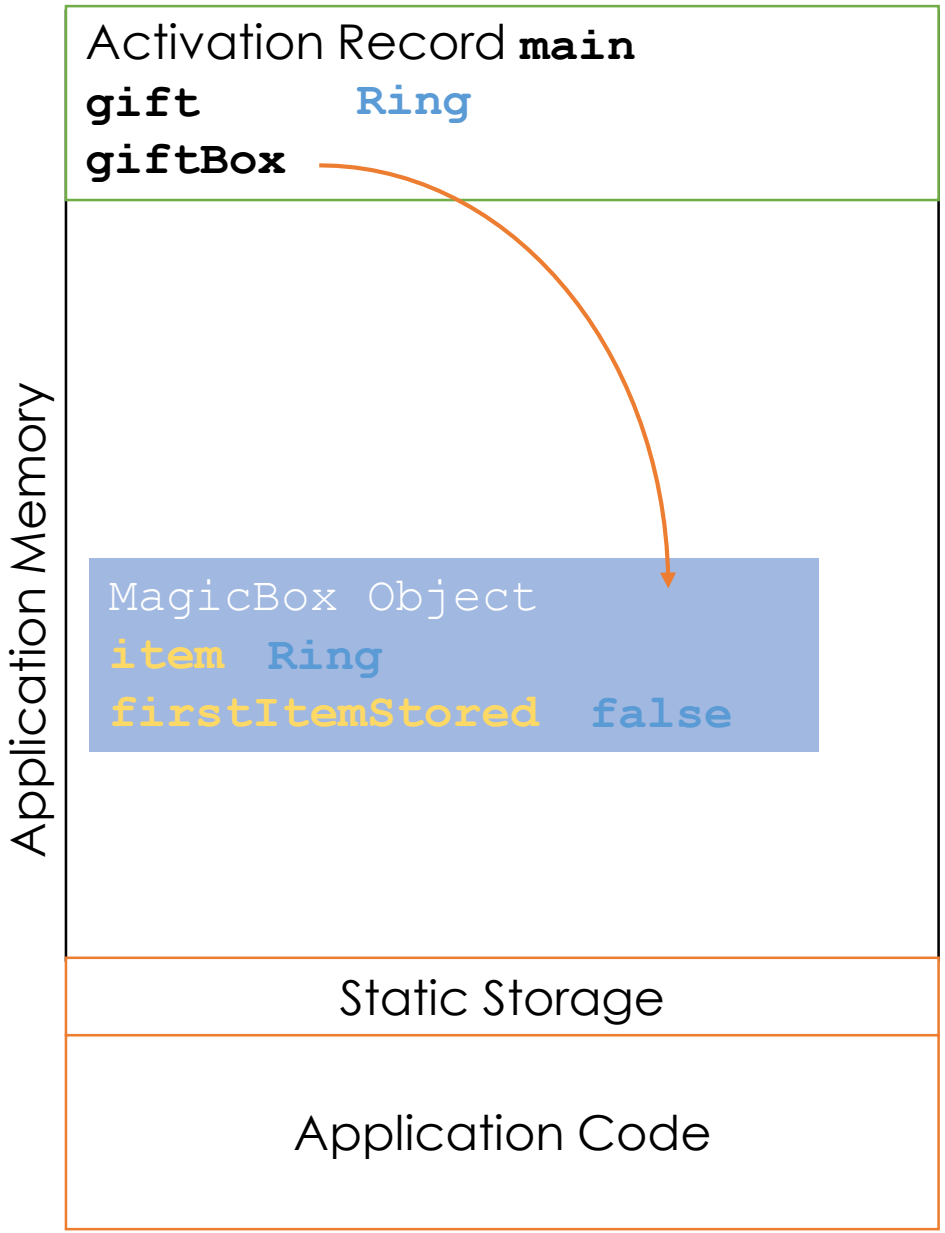

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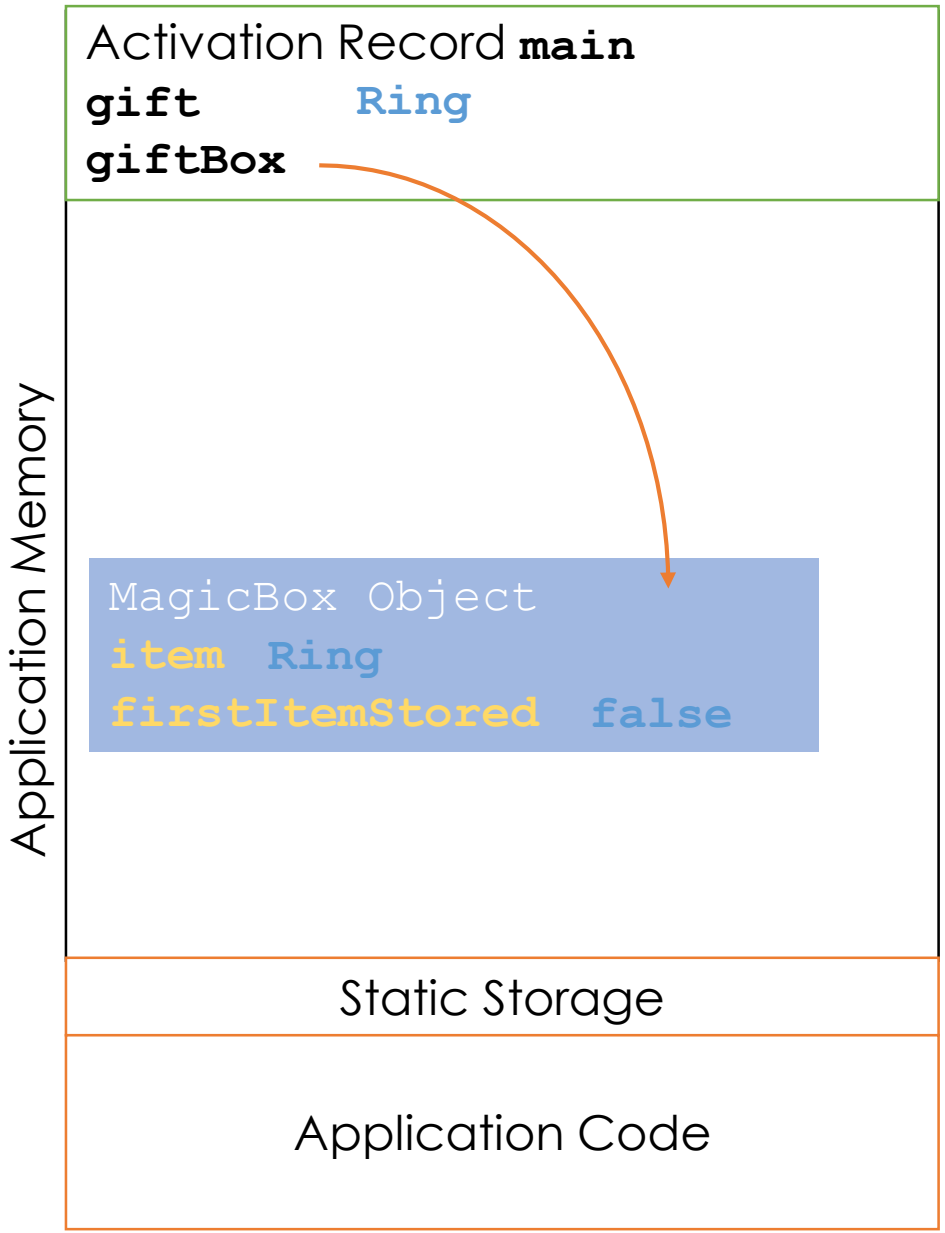

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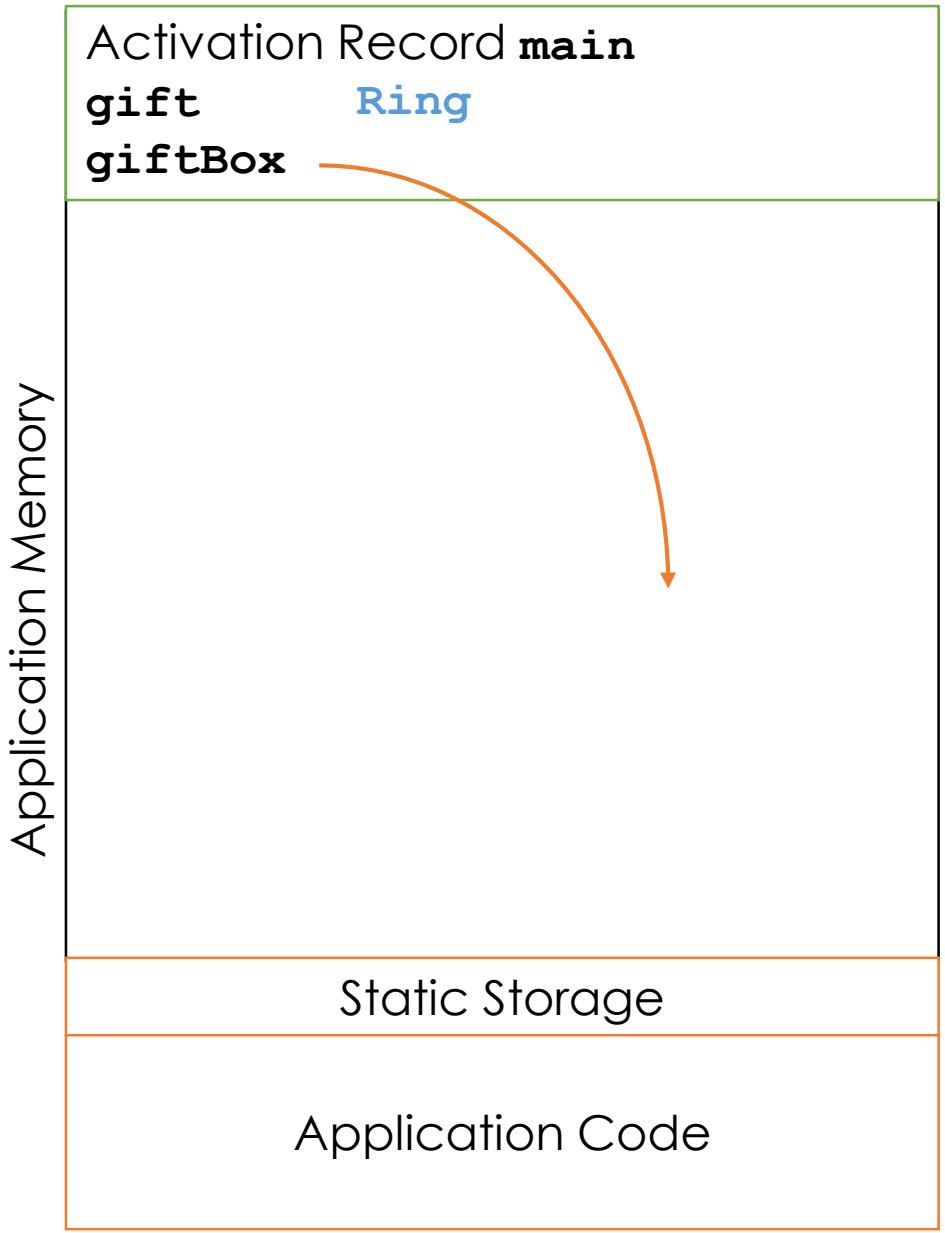

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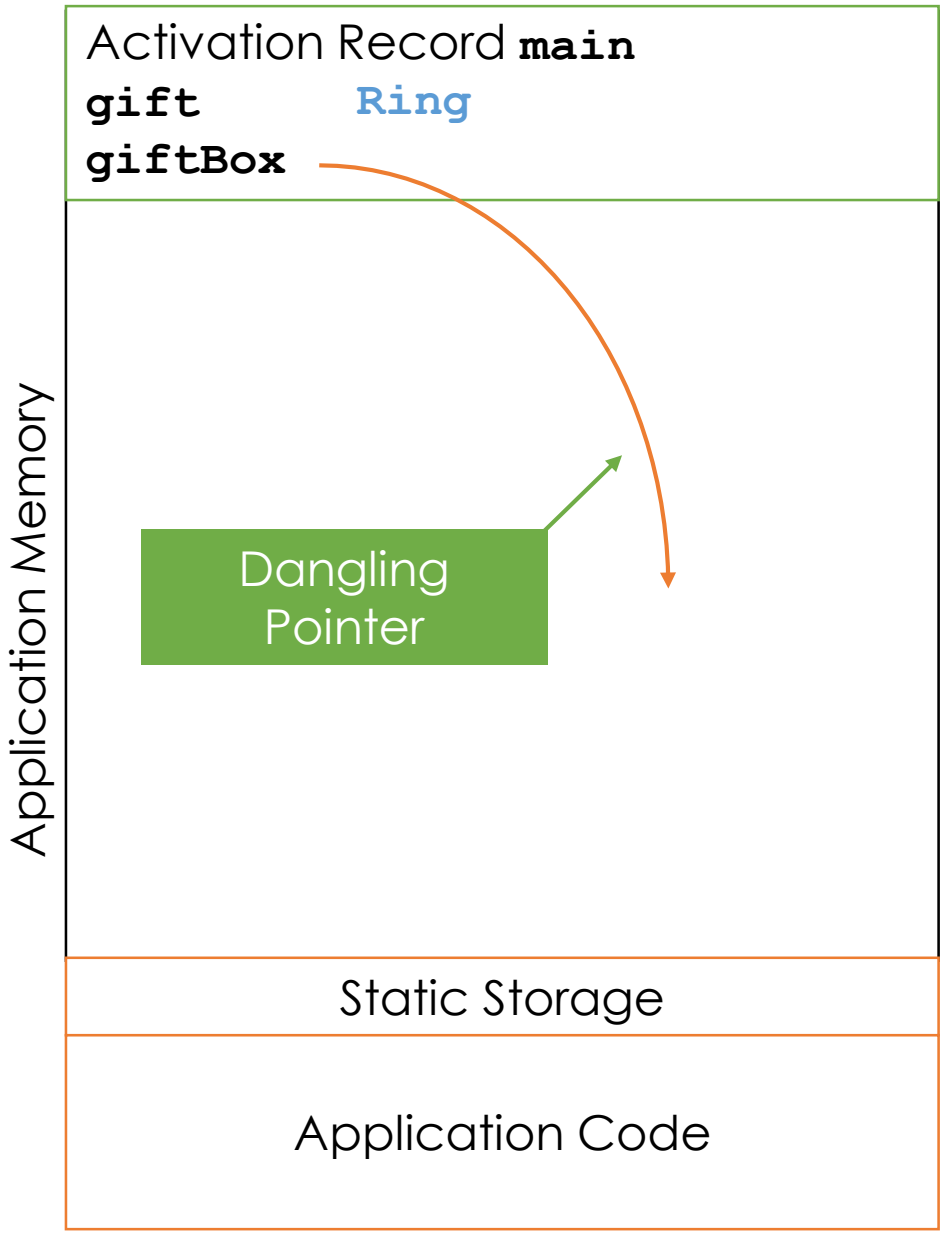

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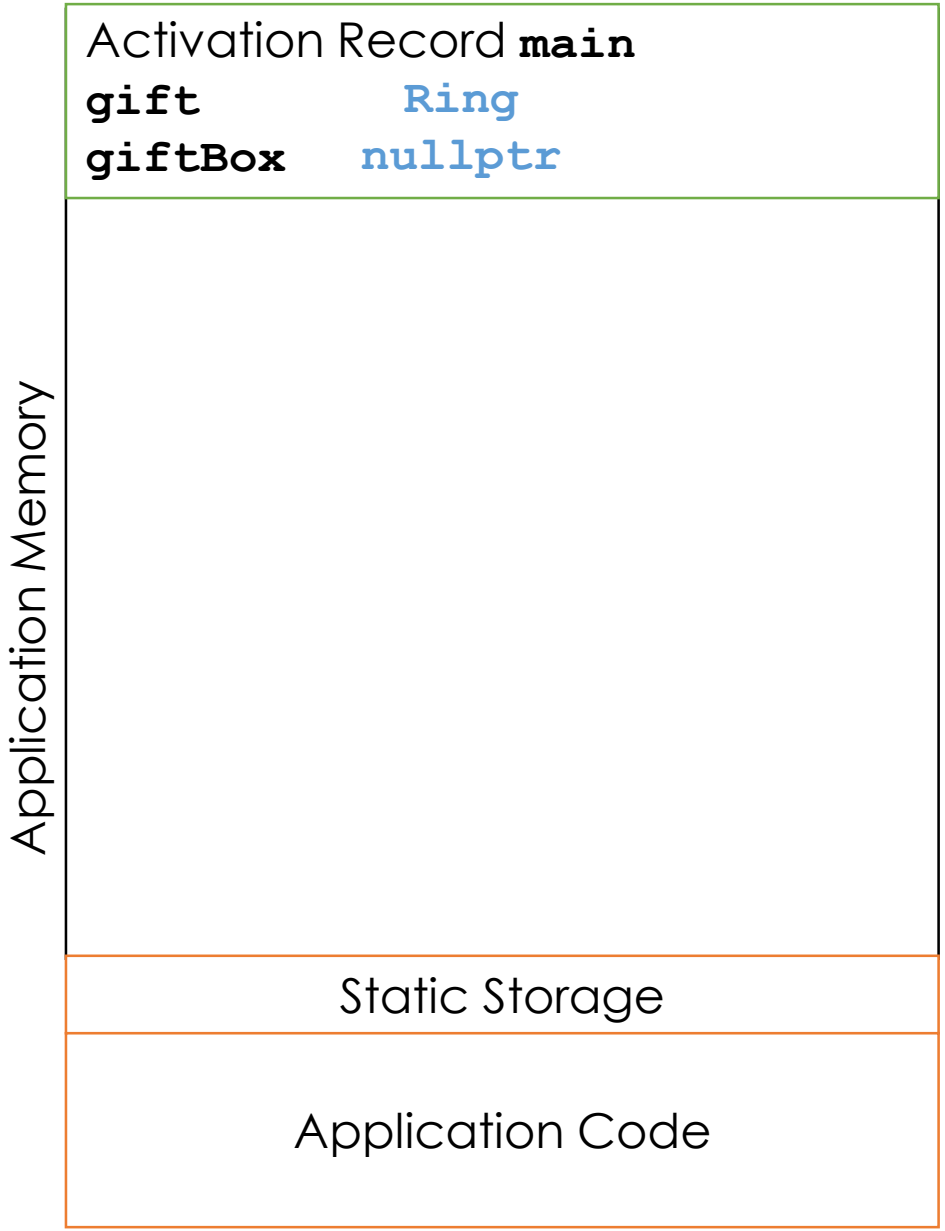

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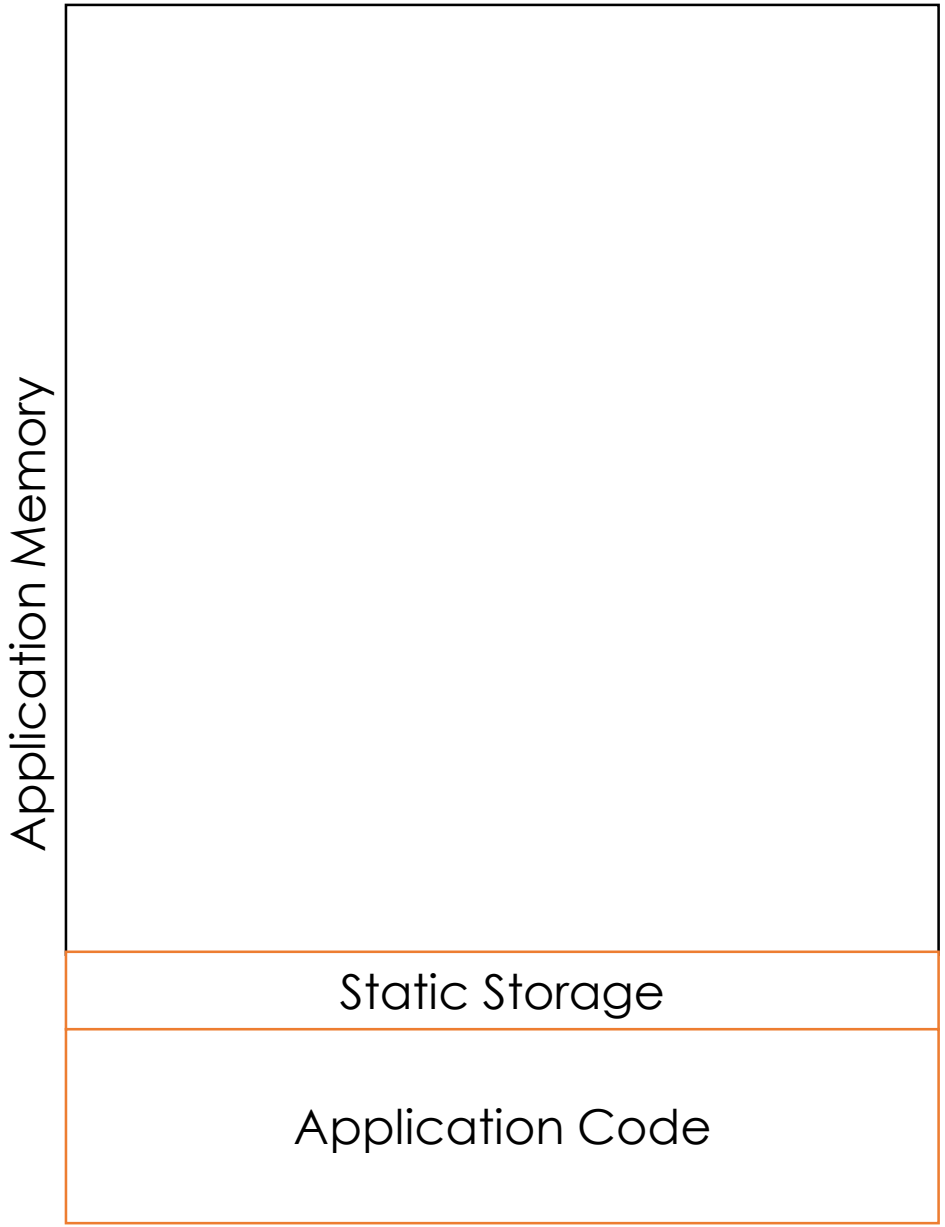

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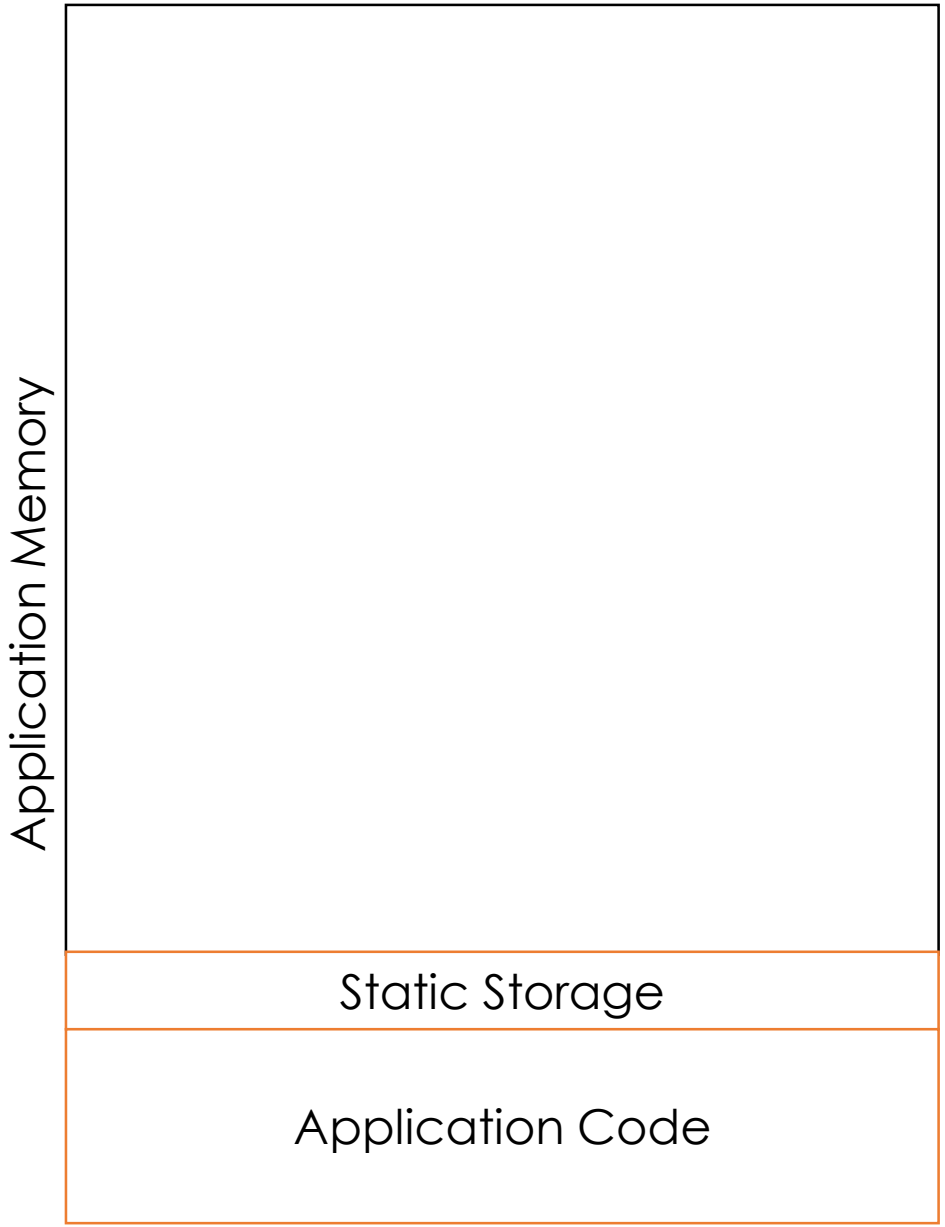

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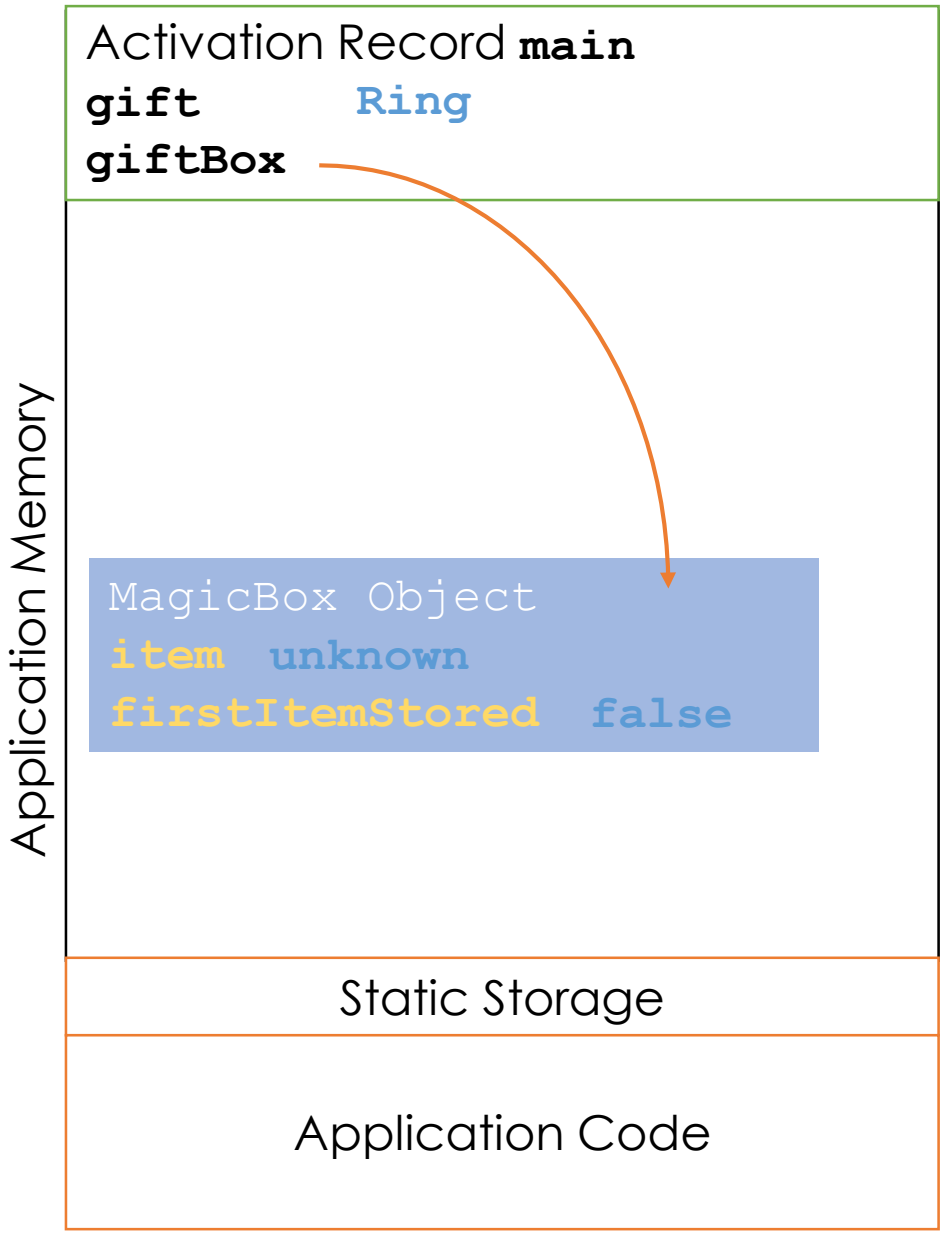

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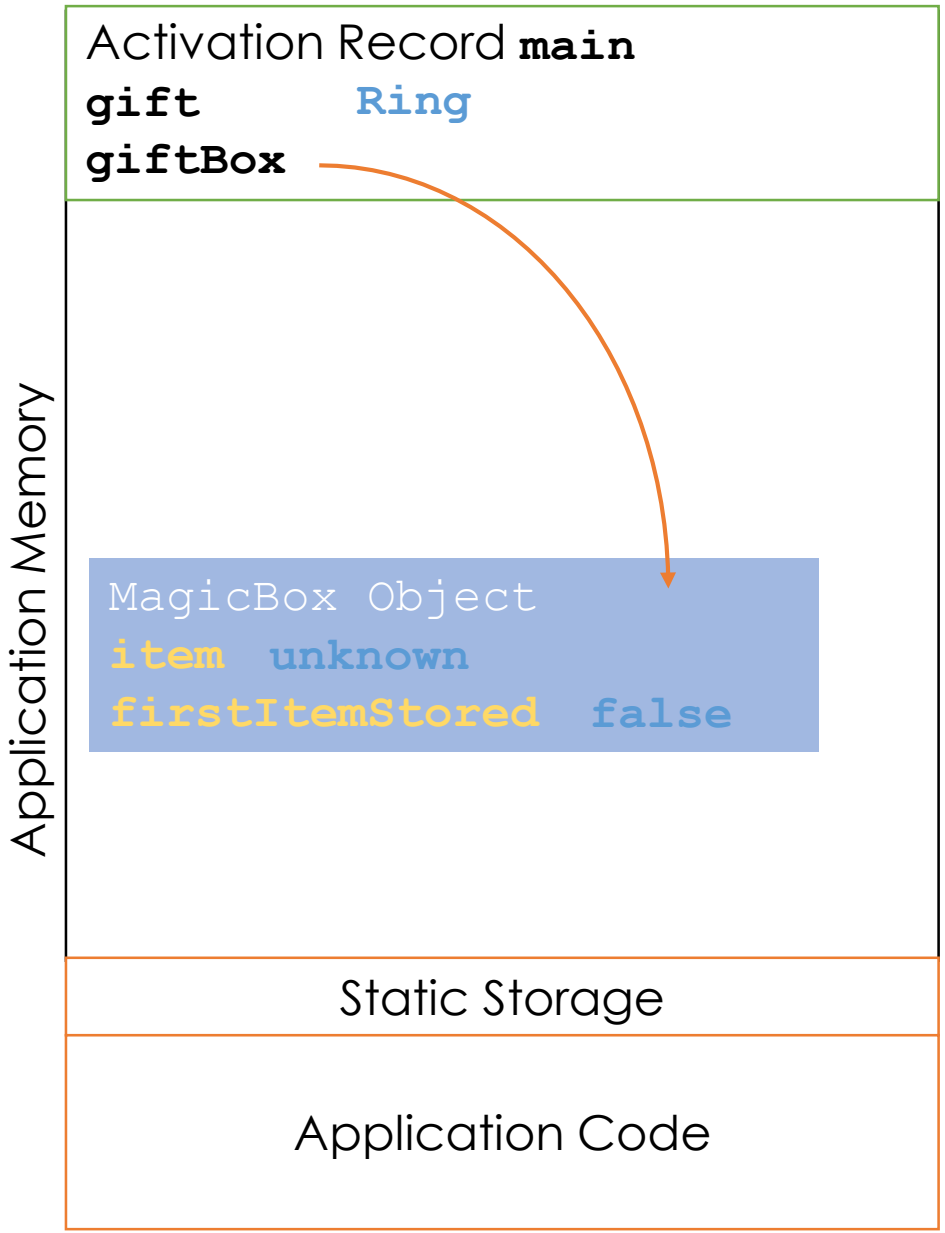

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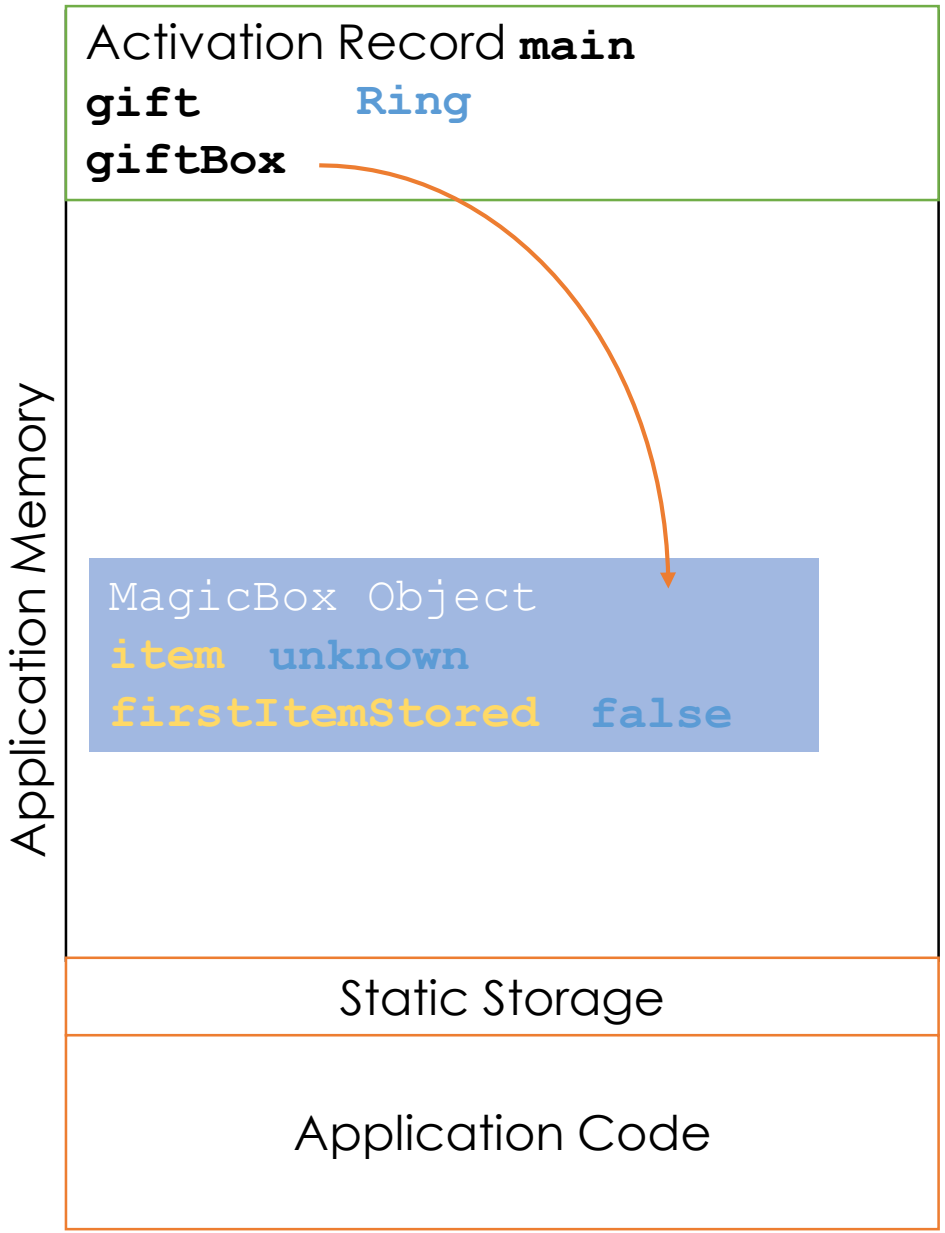


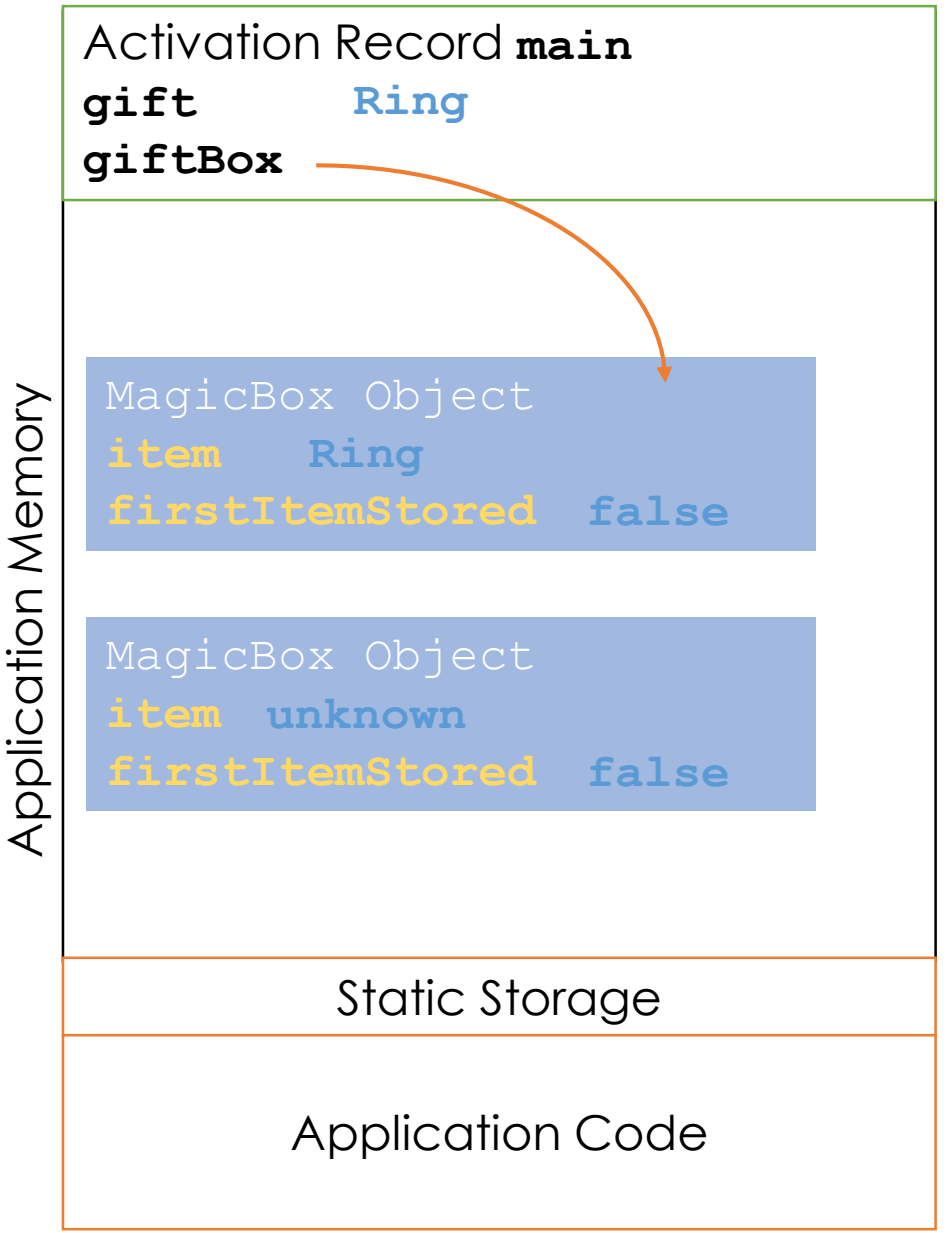
Application Memory

```
#include <iostream>
#include <string>
#include "MagicBox.h"
using namespace std;

MagicBox<string>* makeMagicBox(string something)
{
     MagicBox<string>* myBox = new MagicBox<string>(something);
     return myBox;
}

int main()
{
     MagicBox<string>* giftBox = new MagicBox<string>();

     string gift = "Ring";
     giftBox = makeMagicBox(gift);
     cout << giftBox->getItem() << endl;
     delete giftBox;
     giftBox = nullptr;
     return 0;
}
```



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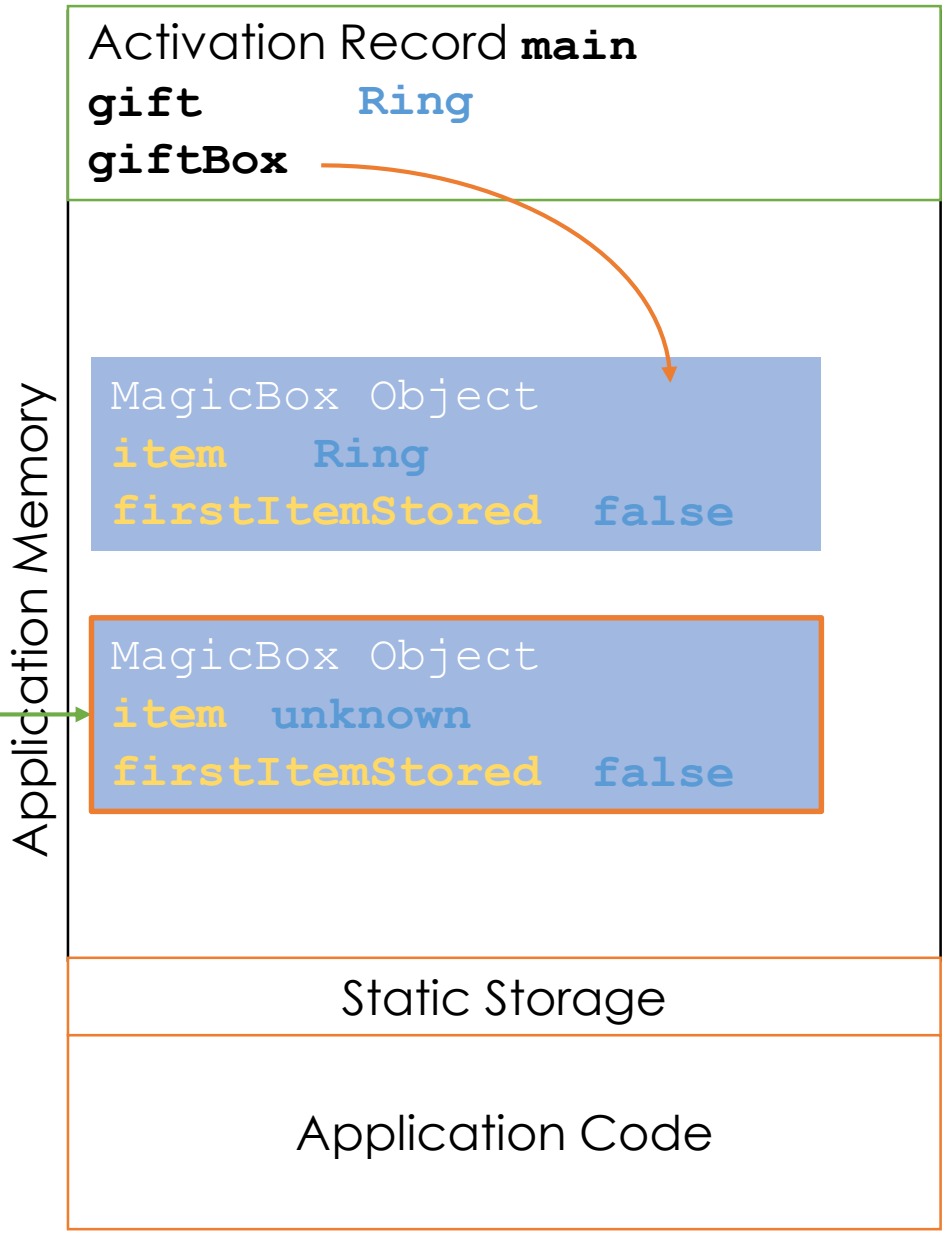
Memory Leak



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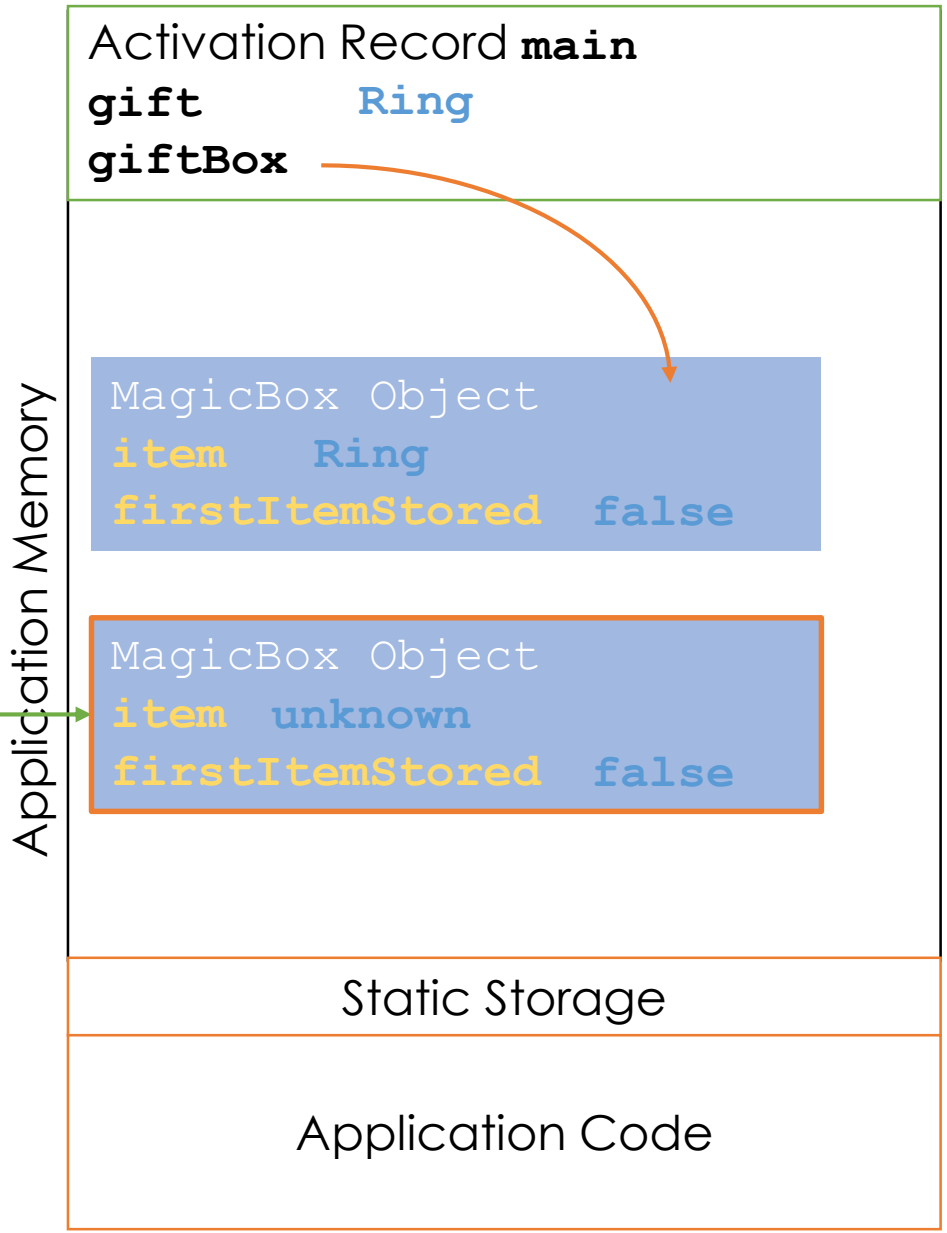
Memory Leak



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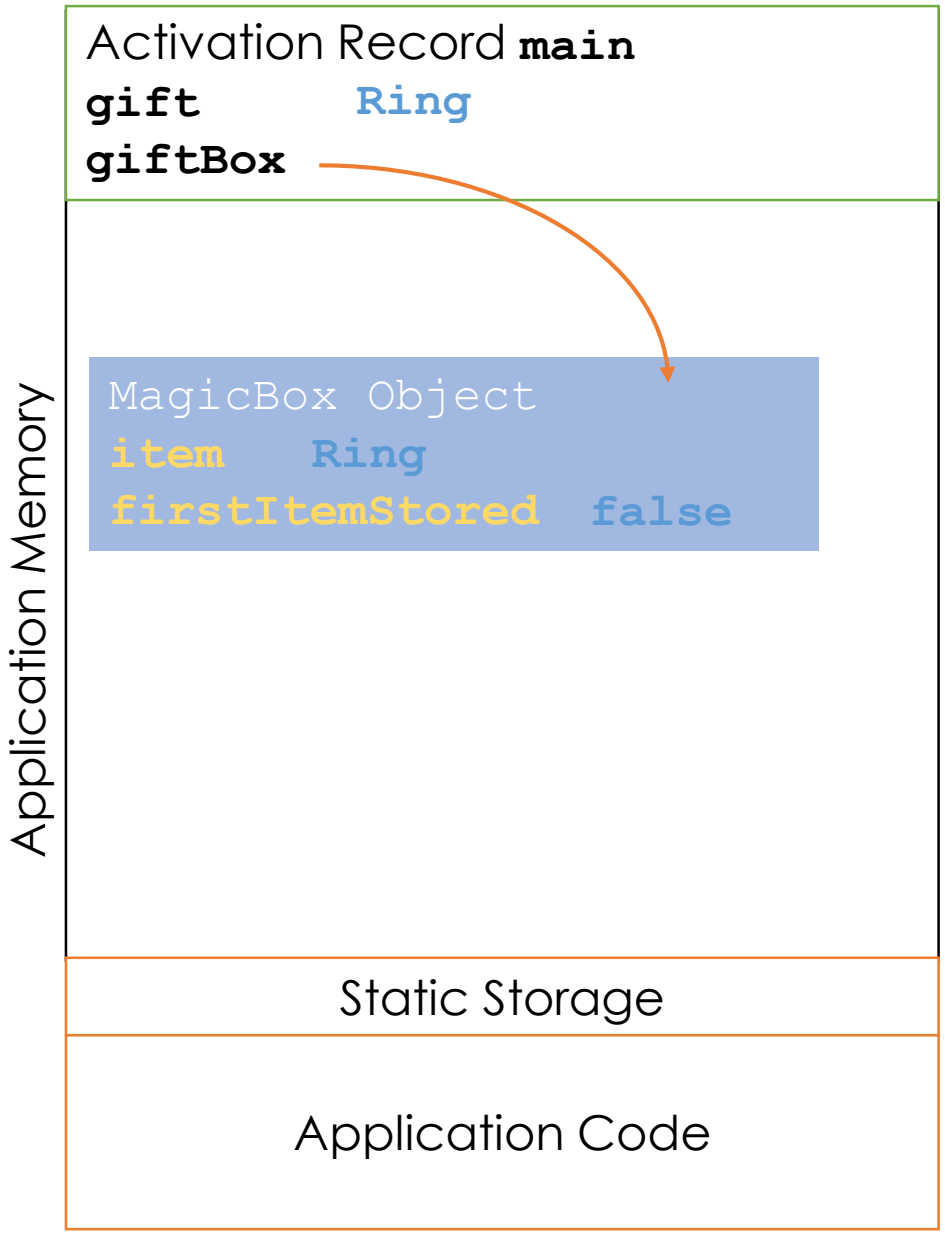

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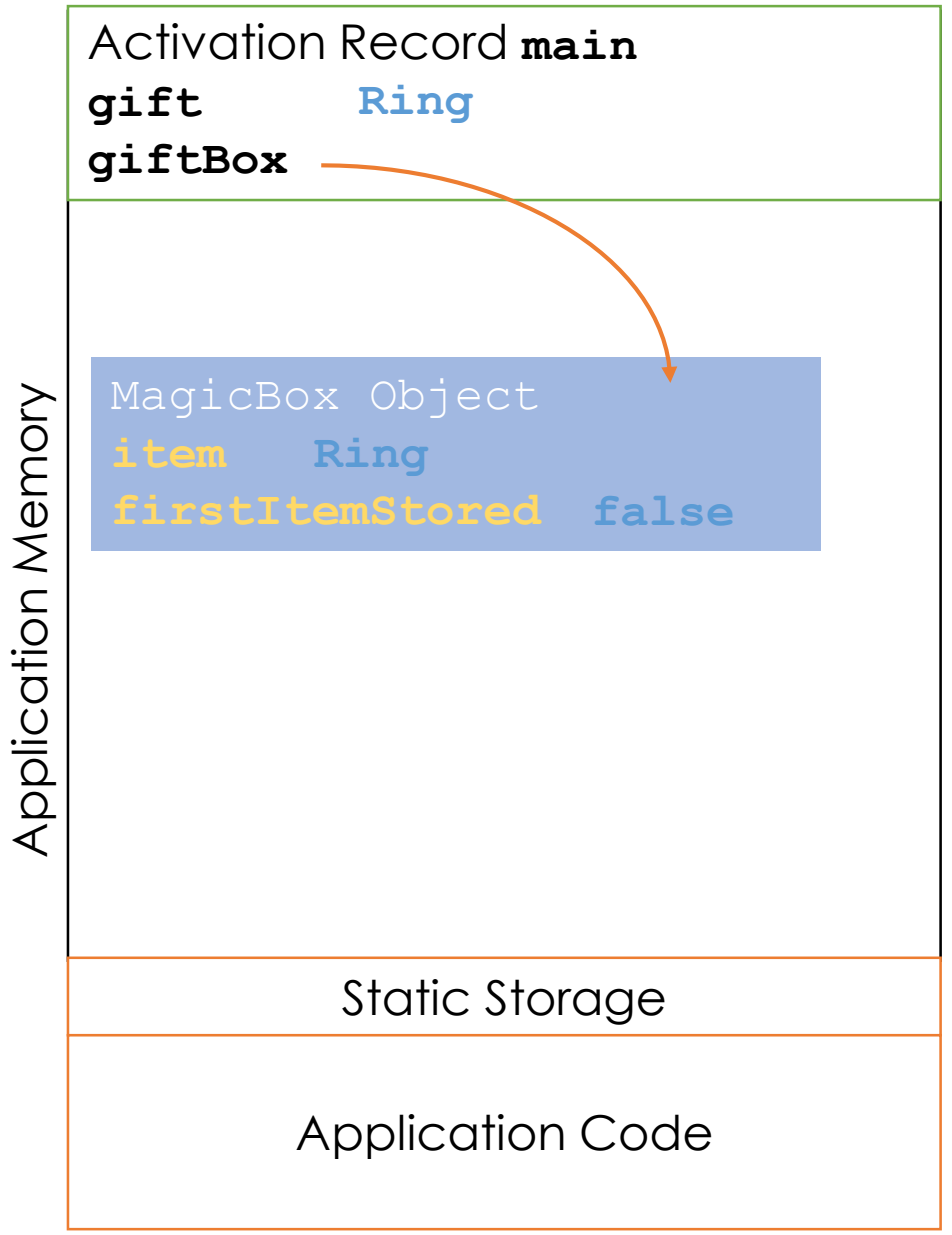

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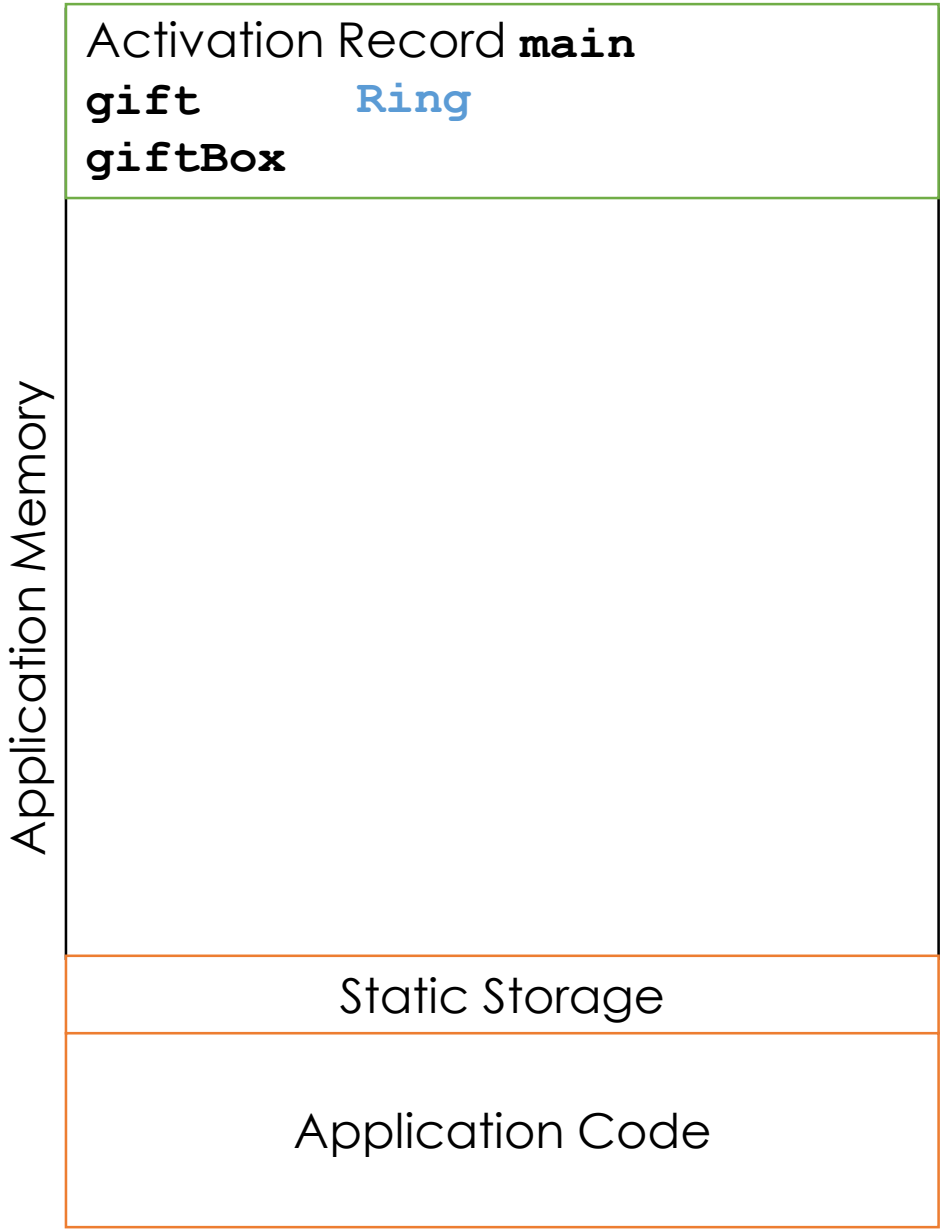

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}
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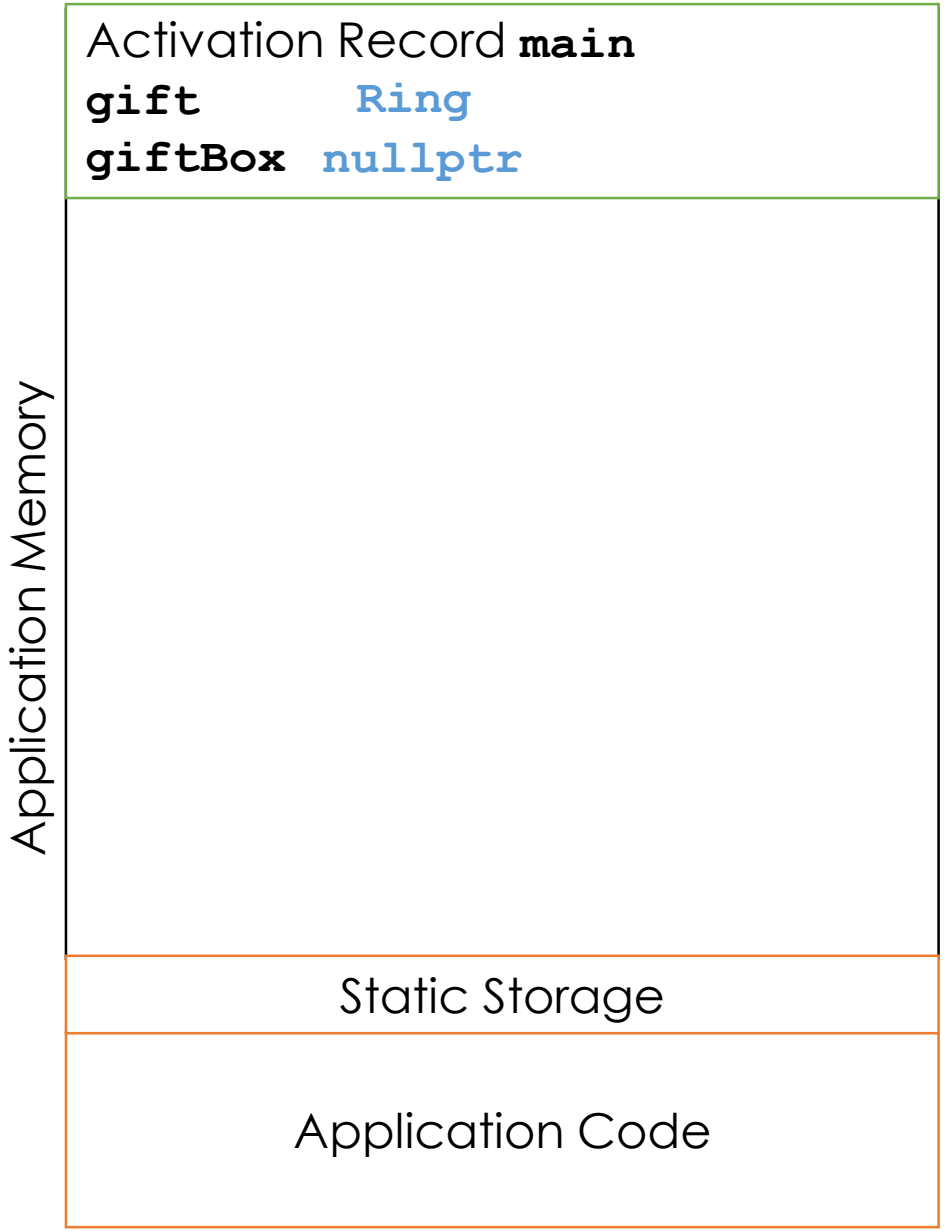

Thank you